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ABSTRACT

This collection of activity guides was produced for The Handicapped Children's Nature Study Center in Davenport, Iowa, however the guides are designed to be used in any outdoor area by elementary teachers of either handicapped or "normal" children. The emphasis is on making the students more sensitive to their environment by the use of all senses. Purpose, objectives, concepts, and activities are described separately for each of the five senses. Also indicated are teacher's guides for four activities at the Nature Study Center in Davenport. The activities are titled, Dike Hike, Fall Walk, Tree Planting, and Tracking. Each guide includes a list of resource materials and suggestions for further activities. This work was prepared under an ESEA Title III contract. [Not available in hard copy due to marginal legibility of original document.] (PR)

ED 046709

OBSERVING OUR ENVIRONMENT THROUGH OUR SENSES

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a TITLE III, E.S.E.A. project
Administered by
Muscatine-Scott County School System
1523 S. Fairmount
Davenport, Iowa 52802

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UNIT I

SE 010 119

CONTENTS

Introduction

Acknowledgements
Suggestions for Use

I. Brief General Overview of Five Senses

II. Guides By Senses
A. To See
B. To Feel
C. To Hear
D. To Smell
E. To Taste

III. Comprehensive Overview of Five Senses

Appendices

Resources

INTRODUCTION

A. Introduction to Unit I

"Observing Our Environment Through Our Five Major Senses — See, Feel, Hear, Smell and Taste" is designed for teachers of handicapped students as well as teachers of 'normal' students. Its purpose is to encourage and guide the teacher in encouraging and guiding his students into our outdoor world, and to help them begin to observe, explore and experiment in outdoor activities.

B. Acknowledgements

Acknowledgement is made and appreciation expressed for the help received from others in the preparation of these guides. Special acknowledgement is made to Phyillis M. Ford, Chairman of the Recreation Leadership Program, The University of Iowa, for reading the manuscripts and making many valuable criticisms. Also, the assistance of Joe Moore, Science Consultant, and Richard Stebbins, Social Sciences Consultant, in the initial formation and outline of the Unit.

C. Suggestion for Use

It is suggested that these guides be used in the order they are presented. Each guide, however, has been so developed as to enable the teacher to use any one of the guides as she feels it will fit into her curriculum.

It is further suggested that the guides be carried out in the out-of-doors, preferably at the Handicapped Children's Nature Study Center, Fairmount School, 1523 South Fairmount Street, Davenport, Iowa 52802. Each guide, however, is designed to be used in any outdoor area — school yard, vacant lot, city, county or state park, nature area, cemetery or neighboring property. (Permission should be granted for use of non-public property.)

These guides are just that — guides. They are not designed to be folowed word for word — so closely that the teacher does not gear the lesson to the particular spot in the out-of-doors, as well as to her students' capabilities and the existing curriculum. It is hoped that the teacher will use these plans as guides, and design her own questions, activities and evaluations for her own students, curriculum and spot in the out-of-doors.

It is hoped that these guides will serve as a foundation and continual stepping stones to further outdoor activities. These are ends in themselves, but hopefully also, they are means to further activities.

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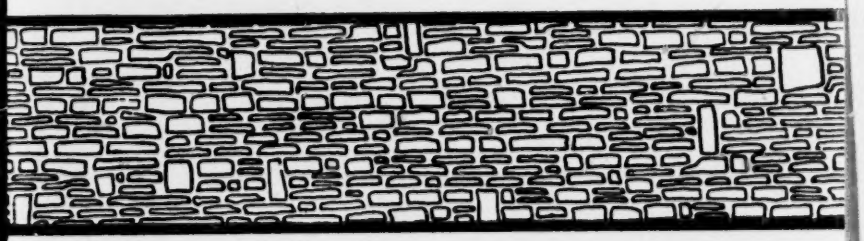
OBSERVING OUR ENVIRONMENT

THROUGH OUR SENSES



A TEACHERS GUIDE

I. BRIEF GENERAL OVERVIEW OF FIVE SENSES

A. Aim

To experiment briefly and begin to realize that we have five senses - see, hear, feel, smell and taste.

B. Purpose

As a basis to benefitting the utmost from further environmental education programs there is a need to lay a foundation of how to do this; in other words, to begin to become aware of the senses and to begin using all five of them. There is also a need to know what our total environment is and what it is like.

Frequently students do use their senses, but how many use them knowingly? Many do not use all five senses or use some more than others, tending to disregard some. By briefly pointing out and actually using each sense specifically, it is felt that the student will be more ready, accepting, for the succeeding guides.

C. Specific Educational Objectives

1. Each student should 'see' things on different levels, and in different directions (eye level, up high, down low and on ground level, etc.) and at distances (6", 3', 12', 25', 100 yds., horizon, etc.).
2. Each student should 'feel' several different shapes, sizes, textures, wind (breeze) against face, hands, back and hair, etc.
3. Each student should 'hear' at several different levels, pitches of sound, different qualities and different tones.
4. Each student should 'smell' pleasant and unpleasant odors and sweet, sour, musty and fresh odors.
5. Each student should 'taste' things that are sweet, sour, and salty; and also things that are pleasant and unpleasant to the taste.
6. Each student should understand and must abide by rules relative to poisonous and/or harmful tastes and smells.

D. Concepts

1. We see at different levels, heights and distances.
2. One student may see things differently from another student.
3. There are many different shapes, sizes, and textures felt in nature.

4. One student may hear differently than another student - levels, volumes, qualities; distress, happy, calling, hungry, etc.
5. Odors differ within a classroom, one room to another, and in different areas of the out-of-doors.
6. There are things good and bad regarding taste and odor in nature.

E. Activities

1. Suggested Lead-Up Activities

a. Take one sense and discuss procedures and start demonstrating with one student.
b. Look at pictures, slides, film strips, films of 'things' in nature which are - listening, looking, touching, smelling, tasting; i.e., rabbit, deer, racoon, woodpecker, mouse, butterfly, ant, dog, cat, owl, etc. Have the students look for these sensory activities.
c. Similar to 'b' (above) but have the students look for wildlife with pronounced sensory organs - sensitive nose, keen ears, large eyes, big mouth, large feet and/or hands, etc.
d. The teacher should gather 'sense' materials. Check out areas for possible sense activities.

2. Activity Procedures & Suggested Questions

In small groups or in large total group, teacher has class do the following activies:

a. Look - high, low, near, far, in, under, around and distance, etc.

The teacher should ask the group (class) questions about <u>each sense</u>, such as:

What do you see up high? ceiling, colors, cracks, insects, cobwebs, shapes, shades, sizes, lights, etc.
What do you see down low? floor, cracks, insects, litter, shapes, colors, shades, dust, holes, stains, etc.
What do you see <u>way</u> out the window? trees, fences, sun, clouds, soils, shrubs, people, buildings, shapes, shades, etc.
What can you see very close to your feet? shoes, socks, floor, pants, etc.
What can you see very close to your face? tongue, nose, cheeks, eye-lashes, freckles, finger, etc.
When down low close to the floor - what can you see? dust, insects, cobwebs, spots, cracks, shades, lines, etc.
Can you see something <u>in</u> (box, wastebasket, crack, bottle), etc.?
Can you see <u>around</u> the corner into the hall? around the clock, etc.?
What can you see <u>under</u> the desks? Under the wastebasket, etc.?

Don't spend too much time on each sense; just enough to get the idea. Keep moving; spend more time in the out-of-door guides - II, A, B, C, D, E, and III.

b. Feel - soft, hard, sharp, rough, smooth, round, square, large, small, thin, flat, bumpy- ridges, springy, breeze, slippery, slick, sticky, spongy, etc.

What does the desk feel like? the floor, the ceiling, ruler, chair, pencil, paper, sponge, etc.
With things that look similar, what feels different?
Which things feel soft? Why?
What shapes are a ball, book, pencil, glass, desk legs, clock, cracks, etc.
What is large? small, very large, monstrous, enormous, etc.
Can you feel a breeze? face, hands, back, hair, etc.
Can you see a breeze? trees, flag, etc.

c. Hear - high, low; soft, loud; full, thin; happy, sad; fast, slow; work, play; etc.

Where does the noise come from? direction and maker.
Can we hear the same noises facing each direction? close to the window and by the door? What do you hear?
What does the noise maker look like?
How is the noise made?
What makes the difference between a thin and full sound?
Does wood make noise?
How do animals make noise? insects?

Try the above with your eyes closed now.

d. Smell - pleasant, unpleasant, sweet, sour, musty, fresh, spoiled, etc.

The teacher should discuss the possibility of some odors being poisonous, or harmful and should be kept away from/or only taken in tiny, faint whiffs.

What can we smell while sitting at our desks? books, desks, skin, clothes, paper, lunch, pencils, erasers, etc.
What can be smelled that is different near the windows? near the open windows?
Are there different odors in the hallways? Upstairs? Basement? Office?
Can you tell by just smelling what something is? With your eyes closed?

e. Taste - sweet, sour, salt, bitter, onion, metallic, rancid, hot, cold, etc.

The teacher should first discuss the importance of safety involved in tasting. We don't just taste anything and everything in nature. Only with the teacher, and then only if the teacher knows about the item.

As with odors, what is pleasant to one may not be to others; all senses generally differ from individual to individual.

What items taste sweet?
What makes the items taste sweet?
Are metallic things good to eat?
What animals might eat rancid foods?
Are the senses of hot and cold really tastes?
Why do onions make our eyes water?
What tastes bitter? Why?

3. Materials and Definitions

Things to: smell, feel, hear, see, taste — Science boxes or any collection of various things to see, feel, hear, smell, and taste. But try to use just what's there. Try to point out sense differences from one item to another.

Resources - Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

When requesting plans and/or materials from the outdoor education consultant explain what it is you plan to be doing and the outdoor education consultant will gather and send suitable materials.

This listing will be updated as more materials are acquired by the nature center. Meanwhile, please consult the I.M.C. book and film listings and those resources available from the C.C.L.P. at Fairmount School as noted in the appendices. * indicates that the materials are available at the Handicapped Children's Nature Study Center.

a. <u>Films</u>

1) "How We Look at Things"
Kalamazoo Nature Center
7000 North Westnedge
Kalamazoo, Michigan 49001
$10.00 rental
27 minutes
16 mm, color, sound

2) "Patterns of the Wild"
U.S. Forest Service
U.S. Department of Agriculture
Washington, D. C. 20250

b. Phonograph Recordings

"Sounds of Nature" and other bird and similar recordings
(Houghton Mifflin Co.) - Write to:
Laboratory of Ornithology
Cornell University
Ithaca, New York 14850

"Barnyard Animals" and other similar good nature recordings
Droll Yankees, Inc.
Providence, Birds, Pond, Meadow, Forest
Rhode Island 02906

* "Sound Patterns"
Folkways Record FX 6130
(descriptive notes inside pocket)

Similar recordings are available at C.C.L.P.

c. Nature Charts, Booklets, Flashcards

National Audubon Society
1130 Fifth Avenue
New York, New York 10028

Nature Study Center has some materials on birds & mammals.

* Gull Lake Environmental Education Project
Kellog Bird Sanctuary
Route I
Box 339
Augusta, Michigan 49012

Nature Study Center has charts on pond life, birds & mammals.

d. Books

1. Audubon Nature Encyclopedia — C.C.L.P. has a set available.
2. Encyclopedia Brittanica
3. Golden Book Nature Series for Children
4. Other similar encyclopedias with wildlife plates
5. Life Nature Library Series
6. Learning About Nature Through Games, Musselman, V., IMC #14453 — I 570.
7. Andy All Year Round, Merriam, E., IMC #15115 — P 525.
8. My Five Senses, Aliki, IMC #11882 — P 612.

e. Magazines

1) Audubon, National Audubon Society

2) National Wildlife, National Wildlife Federation

3) Ranger Rick, National Wildlife Federation

4) The Conservationist, State of New York Conservation Dept.

5) Outdoor World, Preston Publishing Company

6) National Geographic, National Geographic Society

f. Pamphlets

Boy Scout Merit Badge Pamphlets - 35¢
Wildlife, mammals, birds, etc.

4. Time and Place

Any time
Classroom, or anyplace out-of-doors
Length - approximately 1 hour for all 5 senses. Spend more time using specific outdoor guides.

F. Related Curriculum Activities

1. Physical Education - act as wildlife using senses - tasting, listening, feeling, smelling, looking. Or, act as wildlife with pronounced senses - eyes, ears, nose, etc.

2. Recreation - carry-over activities - on the way to and from school - nature games.

3. Music - listen to music, or sounds, or nature sounds, etc.

4. Art - sketch wildlife using their senses.

G. Combined Activities

1. Take a trip outside school and look, listen, feel, smell and possibly taste what is in one spot.
2. Do the same in another spot around the school or neighborhood.
3. Repeat #1 - weekly, monthly, seasonally - each time the same spot, trying to sense something new or different than before. 'Things' observed can be charted and/or mapped.

H. Evaluations (see appendix for sample instruments)

1. Check list
2. Teacher comments, paragraph
3. Pupil written tests - objective, subjective
4. Student verbal tests

I. Suggested Further Activities

1. Go on with Guides by Senses II, A, B, C, D, E, and III.
2. Review this guide in the classroom, around the school or in different spots in the neighborhood. Use the same and/or more questions for each sense, or those senses needing practice, or where interest is (but, don't neglect the point of these guides - to use and realize all five of our major senses).
3. Begin relating the senses to nature as much as possible.

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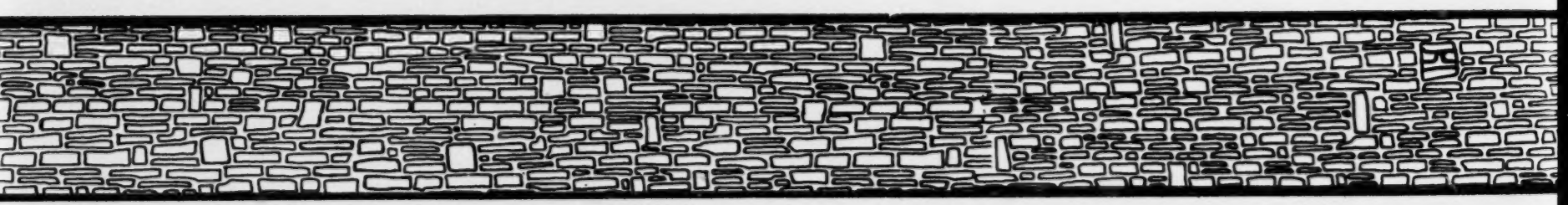

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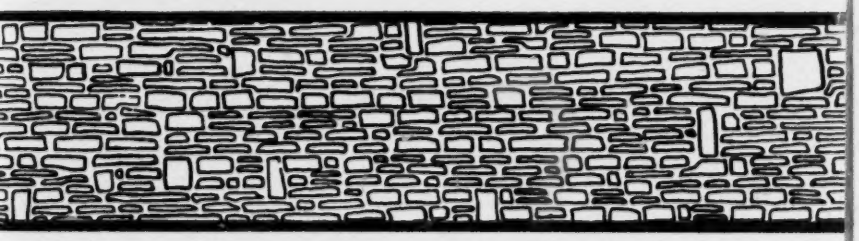
OBSERVING OUR ENVIRONMENT

THROUGH OUR SENSES



A TEACHERS GUIDE

II. GUIDES BY SENSES

A. To See

1. Aim

To begin to get the 'idea and sense' of observing our total environment through one of our major senses.

2. Purpose

In order for our students to become sensitive to their environment we must help them develop the skills of thinking, seeing, and doing for themselves. The need to do this is not only for sensing and solving problems but for enjoying the beauty, serenity and mystery involved throughout our different environments.

Students need to use their senses not only in the Handicapped Children's Nature Study Center and in their classrooms but, almost more importantly, they need to use their senses with their families and friends as they grow and experience outside their school activities.

3. Educational Objectives

a. Each student should observe nature's colors, shades, shapes and sizes.
b. Each student should observe things in nature at different distances - near, far, distant and close.
c. Each student should observe things in nature at different heights - eye level, up, down, waist, tiptoe, on a chair, on a stump, lying on the ground, etc.
d. Each student should look under and around things in nature.
e. Each student should see what is pleasant and what is not pleasant in nature.

4. Concepts

a. We see at more than one height, level and distance.
b. Things may need to be searched for, though not disturbed.
c. Each student may see different things and things differently in nature.
d. There are different colors, shades, shapes, sizes and textures in nature.

5. Activities

a. Suggested Lead-Up Activities

1) Discuss and go through activities in the classroom that you will be doing outdoors.
2) Discuss behavior in the out-of-doors.
3) Carry out Guide I of this Unit.

b. Activity Procedures & Suggested Questions

With a group of 8-10 students the teacher should pick a spot for the group to stand. It can be around the school, vacant lot, school playground, front yard, neighbors yard, or the Nature Center. As the students stand have them observe through their eyes what they see:

First - What do you see at eye level?
As the students are looking, the teacher asks the following and more, questions to get the students thinking:
Can you see very far away, or is there tangled growth? branches? grasses? etc.
What colors are there? Shades?
Is everything still, or some, or all moving?
What sizes do you see? Compare with known items.
What shapes do you see?

Second - Look up very high, toward the sky.
Do you see leaves falling? Ashes?
Are there clouds? What shapes? Thin, fat, long, etc.
Are you looking through tree branches?
What do they look like?
Can you see the sky? What color is it?
Can you see smoke? Up high, on horizon; column, or spread out? Color?
Can you see stars? Moon? Plane trails (vapors)?

Third - Look down toward the ground.
What can you see? Footprints, litter, tire marks, pebbles, puddles, soil, colors, etc.
Do you see any form of life? Plant or animal?

"SHOULD OUR FORESTS LOOK LIKE THIS ?"

Fourth - Have the students get down on the ground level and answer the following questions as to why or why not.

What do you see just in front of you?
Same as in the distance?
Can you see up to the sky?
Can you see down very far?
Hole? Water? Why or why not?

c. Materials & Definitions

Vocabulary - use activity and question words (colors, shades, shapes, sizes, 'things' seen - plants, animals, soils, waters, etc.)

Only natural materials are needed unless there is a student recorder (paper, pencil, clip-board).

d. Time and Place

Any time
Any place out-of-doors
Length - ½ hour to whatever desired

6. Related Curriculum Activities

a. Recreation - carry-over - do with family or friends. Try nature games.
b. Physical Education - act as wildlife you have seen - flying, floating, growing, bending, etc.
What do you see when you jump? crawl, lay down, tip-toe, run, turn, etc.?
c. Music - listen to nature sounds on records; make sounds for what you saw.
d. Art - sketch, draw, color what you have seen.

7. Combined Activities

a. Fifth - Do all four activities, but in different areas within a small area; within a large park or neighborhood.
b. Sixth - Do all four activities in different environments - river side, street, park, downtown, etc. Compare.

8. Evaluations

a. Check list
b. Teacher comments
c. Written pupil tests
d. Verbal pupil tests

Please refer to appendices for samples.

9. Suggested Further Activities

a. Continue with Sense Guides
b. Do fifth and sixth activities at any time and in any area, for practice and for fun.

10. Resources

Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

When requesting plans and/or materials from the outdoor education consultant, explain what it is you plan to be doing and the outdoor education consultant will gather and send suitable materials.

This listing will be updated as more materials are acquired by the nature center. Meanwhile, please consult the I.M.C. book and film listings and those resources available from the C.C.L.P. at Fairmount School. * indicates that the materials are available at or through the Handicapped Children's Nature Study Center.

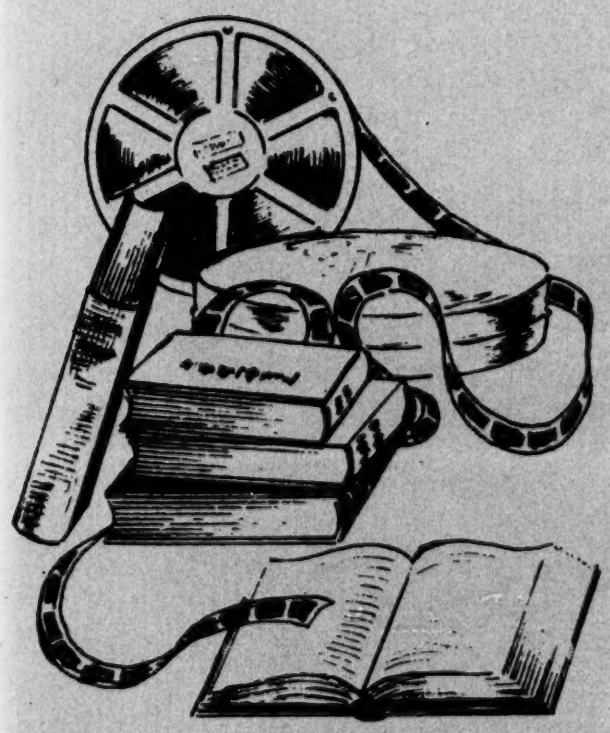
a. FILM

"How We Look at Things" — $10.00 rental
Kalamazoo Nature Center — 27 minutes
77000 North Westnedge — color, sound, 16 mm.
Kalamazoo, Michigan 49001

Check appendices for further films

b. CHARTS, BOOKLETS, FLASHCARDS

* National Audubon Society — Nature Center has:
1130 Fifth Avenue — bird & mammal charts,
New York, New York 10028 — booklets, & guides



* Gull Lake Environmental Education Project
Kellog Bird Sanctuary
Route 1, Box 339
Augusta, Michigan 49012

Nature Center has: pond life, bird and mammal charts, booklets and guides

Check appendices for additional charts, booklets, etc.

c. BOOKS

L)	Learning About Nature Through Games, Musselman, V., IMC #14453	I	570.
2)	Andy All Year Round, Merriam, E., IMC #15115	P	525.
3)	My Five Senses, Aliki, IMC #11882	P	612.

Check appendices for additional books

d. MAGAZINES

1) Audubon - National Audubon Society
2) National Wildlife - National Wildlife Federation
3) Ranger Rick - National Wildlife Federation

Check appendices for additional magazines

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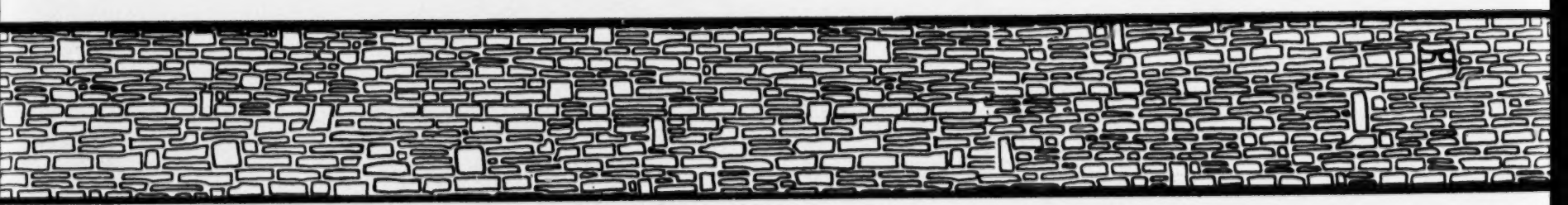

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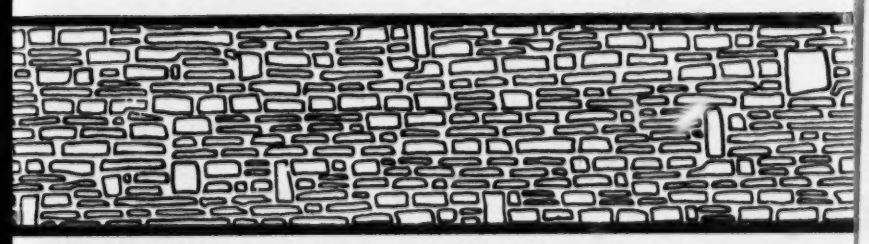


A TEACHERS GUIDE

B. To Feel

1. Aim

To begin to get the 'idea and sense' of observing our total environment through one of our major senses.

2. Purpose

In order for our students to become sensitive to their environment we must help them develop the skills of thinking, seeing and doing for themselves. The need to do this is not only for sensing and solving problems but for enjoying the beauty, serenity and mystery involved throughout our different environments.

Students need to use their senses not only in the Handicapped Children's Nature Center and in their classrooms, but almost more importantly, they need to use their senses with their families and friends as they grow and experience outside their school activities.

3. Educational Objectives

a. Each student should feel different kinds of tree bark.
b. Each student should feel different kinds of leaves.
c. Each student should feel some things that are hard (shells, pebbles) and some that are soft (early spring buds, mud), etc.
d. Each student should feel smme things that are round as well as square, oblong, rectangular, cube, large, small, flat, (flat stems, round stems, jointed stems), etc.
e. Each student should feel some things that are smooth and some that are rough, pebbly, shaggy, glazed, sticky, etc.
f. Each student should feel sharp and dull things (thorns, stumps, twig ends), etc.
g. Each student should compare shapes and textures in nature.

4. Concepts

a. There are many textures in nature (tree bark, leaves, pebbles, soils).
b. Leaves have different shapes, sizes and textures.
c. There are hard and soft things in nature; some alive - some not.
d. There are different shapes and sizes in nature - water, plants, birds, mammals, etc.

e. There are smooth and rough things in nature - pebbles, leaves, bark, seeds, flowers, etc.
f. We are often not aware of air against our faces unless it's wet, very cold, very hot and we are just the opposite.

5. Activities

a. Suggested Lead-Up Activities

1) Go through Guide I of Unit I
2) Discuss following activities and outdoor behavior

b. Activity Procedures & Suggested Questions

With a group of 8-10 students, and aide, the teacher should slowly wander through the out-of-doors, occasionally stopping.

Students should:

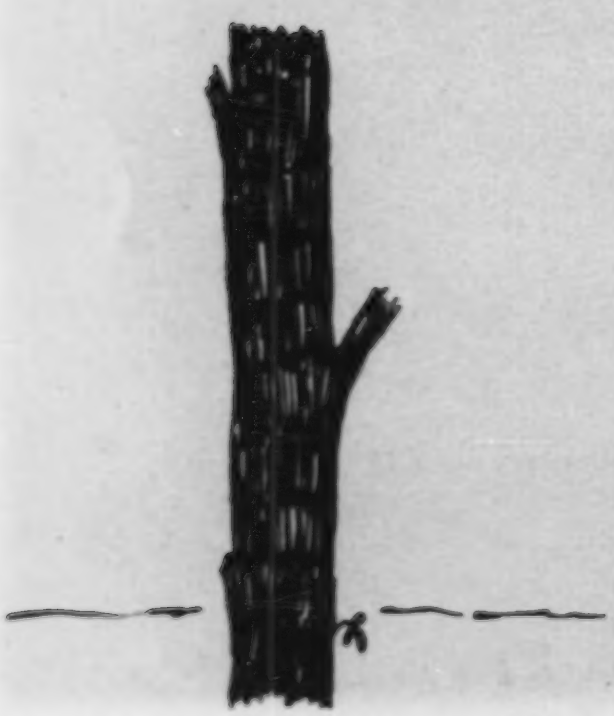
1) Notice whether it is warm or cold, wet or dry, windy or still, etc.

Teacher should ask questions such as:

a) Where is the wind (breeze) coming from? Is it fast, slow, gusty, brisk, sharp, short, long, etc. Or, why is there no breeze?
b) Where is the moisture coming from? Where does it go?
c) Why is it hot or cold?

2) Feel the trunks of different trees to see if they are rough or smooth, scaly, sticky, shaggy, bumpy or thorny, etc.

a) Which trees are rough, which are smooth - trunk, branches, leaves.
b) Do young, small trees feel different from older trees?
c) Why do barks of different trees feel different?
d) Of what use are stickers, thorns, etc.?



4) With your feet, feel where it is hard and soft to walk; rocky, sandy, clay, loam, leaves, branches or wet, etc.

a) Why is some mud sticky and other not?
b) Why do some soils form balls and others don't?
c) Why are some soils like sand and others like cake?
d) Where did the water (moisture) come from?

5) Feel the stems of different leaves and grasses.

a) Which stems are round, square, triangle or jointed, etc.?
b) Does the stem shape make any difference in the plants' movement?
c) What does the stem do?
d) How long are the stems?

c. Materials and Definitions

Students, aide(s), teacher
Student recorder, pencil, clip-board, if desired
Words used in objectives, activities and questions
Refer to the resource listing at the end of this guide

d. Time and Place

Any time
Any place outdoors, preferably the Handicapped Children's Nature Study Center
Length - ½ to 1 hour, or as much time as needed

6. Related Curriculum Activities

a. Recreation - carry over, do at home, friends, family, etc. Try nature games, crafts, etc.
b. Physical Education - walk on leaves, in mud, be trees, or leaves in the wind, etc.
c. Music - make music like the wind - vocal, written, instrumental; make instruments from nature, etc.
d. Art - construct in clay what you felt, saw, or heard, etc.

7. Combined Activities

a. Do similar activities in different areas out-of-doors. Compare, discuss.

8. Evaluations

a. Check list
b. Teacher comments
c. Student written tests - objective and subjective
d. Student verbal tests

Check samples in the Appendix.

9. Suggested Further Activities

a. Continue with Sense Guides.
b. Repeat these activities, change areas, compare; add, and/or change questions.
c. Encourage students to do on their own, with friends or family.
d. Encourage the FUN aspects and adventure.

10. Resources

Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

When requesting plans and/or materials from the outdoor education consultant, explain what it is you plan to be doing and the outdoor education consultant will gather and send suitable materials.

This listing will be updated as more materials are acquired by the nature center. Meanwhile, please consult the I.M.C. book and film listings and those resources available from the C.C.L.P. at Fairmount School.

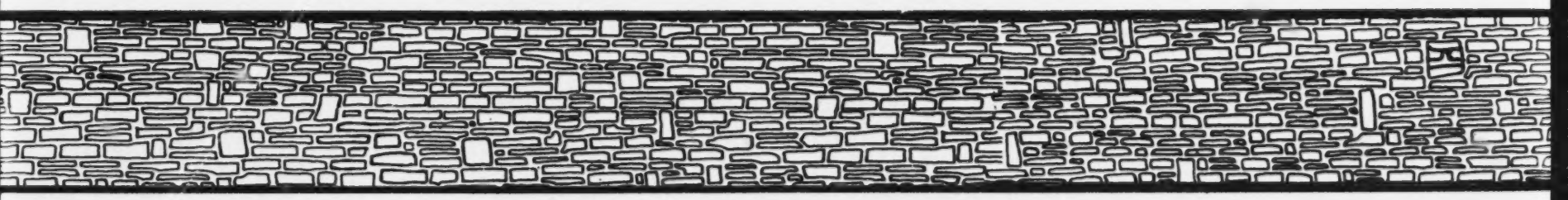
BOOKS

Learning About Nature Through Games, Musselman, V., IMC #14453	I 570.
Andy All Year Round, Merriam, E., IMC #15115	P 525.
My Five Senses, Aliki, IMC #11882	P 612.

Check appendices for further resources

The Handicapped Children's Nature Study Center
a Title III, E.S.E.A., project

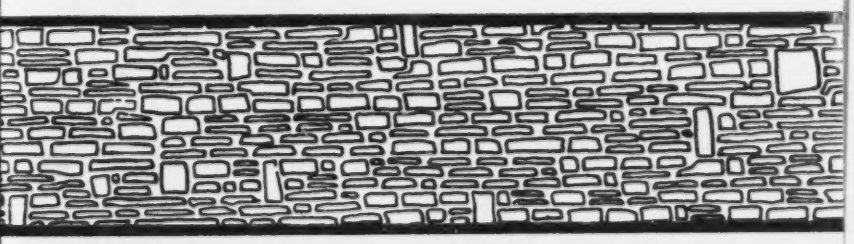
Administered by
Muscatine-Scott County School System
1523 S. Fairmount
Davenport, Iowa 52802



Dr. Paul J. Staskey, Director
Clara A. Emlen, Consultant

OBSERVING OUR ENVIRONMENT

THROUGH OUR SENSES



A TEACHERS GUIDE

C. To Hear

1. Aim

To begin to get the 'idea and sense' of observing our total environment through one of our major senses.

2. Purpose

In order for our students to become sensitive to their environment we must help them develop the skills of thinking, seeing and doing for themselves. The need to do this is not only for sensing and solving problems but for enjoying the beauty, serenity and mystery involved throughout our different environments.

Students need to use their senses not only in the Handicapped Children's Nature Center and in their classrooos, but almost more importantly, they need to use their senses with their families and friends as they grow and experience outside their school activities.

3. Educational Objectives

a. Each student should listen to loud and soft sounds in nature.
b. Each student should listen to high and low sounds (or pitches) and different pitches or levels in between in nature.
c. Each student should listen to pleasant and unpleasant sounds in nature.
d. Each student should listen to 'full' and 'thin' sounds in nature.
e. Each student should listen to short, long, staccato, blurred, prolonged, pleasant and unpleasant sounds in nature.
f. Each student should identify each of the above in nature.
g. Each student should name each of the above in nature.
h. Each student should describe each of the above in nature.
i. Each student should distinguish each of the above, and distinguish between natural and mechanical and/or man-made sounds.
j. Each student should listen to sounds at different heights and positions in nature.
k. Each student should listen to, identify, name, describe and distinguish some different sounds - calling, warning, hungry, happy and talking, etc; while sitting, standing or kneeling, etc.; on a hill, in a cave, behind a tree, near a stream, under a blanket, etc.

l. Each student should chart nature sounds of a small specific area.
m. Each student should compare inside sounds with outside sounds.
n. Each student should compare sounds from one outside area with another outside area.
o. Each student should identify some sounds with what makes them - tree, wind, rain, bird, weed, insect, animal (large and small), ice and leaf, etc.

4. Concepts

a. There are loud and soft sounds in nature.
b. There are high and low sounds (pitches) and different pitches or levels in between in nature.
c. There are pleasant and unpleasant sounds in nature.
d. There are full and thin sounds in nature (just one bird singing, or many of the same kind of bird singing or many different kinds of birds singing at the same time; one frog or many frogs; a trickling stream, or a roaring brook; breeze in one tree or wind in many trees; etc.)
e. There are short, long, staccato , blurred and prolonged sounds in nature.
f. Each student may hear different sounds and sounds differently.
g. Mechanical and/or man-made sounds may sound just like nature.
h. Mechanical and/or man-made sounds may seem coarse in nature.
i. Nature sounds are generally different between indoors and outdoors.
j. Noise, sudden movements and bright objects may warn, scare or distract wildlife. They often hide or become very still, making it difficult to observe.
k. Nature sounds within different areas of the outdoors may be different or similar.
l. Nature has different reasons or purposes for making sounds - calling, hungry, talking, warning, etc.
m. Silence may mean warning, serene, happy, content, etc.
n. Sounds are sometimes heard differently at different levels - standing, lying down, under a blanket, on a hill, or in a valley, etc.
o. Leaves don't always make noise in falling.
p. Wind makes noise sometimes, sometimes it doesn't.

5. Activities

a. Suggested Lead-Up Activities

1) Go through Guide I of Unit I.
2) Go through Guide II, B & B, of Unit I.
3) Discuss the following activities, procedures and outdoor behavior.
4) Listen to classroom sounds with eyes closed (wind over bottle, things rubbed together, toy truck, ball bouncing, ball rolling, etc.).

5) Listen to sounds in different areas of school (hallways, offices, upstairs, basement; different windows; streets; and away from streets, etc.).
6) Listen to nature records - listen for pitches, volume (thin, full), volume (loud, soft), etc. Also, listen to distinguish sounds - birds, dogs, rain, stream, wind, frogs, cows, etc.
7) Teacher should check out possible 'listening' areas outdoors.

b. Activity Procedures & Suggested Questions

With a group of 8-10 students and aide(s), the teacher should pick a spot in the out-of-doors for the group to stand. The group must be quiet. Explain what often happens if someone is noisy, or makes a quick movement, etc.

1) Have all students shut their eyes and listen. Have one say what he heard, (can mimic the sound, name the sound, and/or point out where the sound came from; try to locate the spot or directions). Have the whole group listen for that sound. Repeat for other sounds. Ask the group the following and more questions:

   a) Was the sound high or low?
   b) Was the sound loud or soft?
   c) Was the sound thin or full?
   d) Was the sound short, long, staccato, blurred, prolonged?
   e) Where did the sound come from?
   f) What made the sound? How? (This will probably come later)
   g) Is there more than one 'thing' making the sound? Other sounds?
   h) Why is the sound being made? happy, warning, calling, hungry, etc.
   i) Teacher needs to make sure the group hears certain things - leaves falling, wind, rain, insects, birds, people breathing, scuffling feet, water (stream or rain), tree shaking, woodpecker, dogs, train, highway, seed pods, etc.

2) Repeat in different areas of the out-of-doors, the school yard, busy streets, near a stream, field, hill or aalley, etc.

3) Select specific areas and record - perhaps four sides of school. Compare four sides in four seasons.

4) Have students pick a small area and record sounds heard while standing, sitting, lying down behind a blanket, blind-folded, etc.

c. Materials & Definitions

Students, aide(s), teacher
Student recorder, pencil, clipboard, paper - if desired

Words used in activities, questions & objectives

Please refer to Resources at the end of this guide for recordings and other resources for hearing sense activities.

d. Time and Place

Any time
Any place outdoors; preferably the Handicapped Children's Nature Study Center
Length - probably one hour; according to interest, variety, and weather

6. Related Curriculum Activities

a. Recreation - get nature records at library; listen to nature on way home, listen in local parks, neighbor's yards, vacant lots, etc.
b. Physical Education - move like wind sounds; act like animals heard, etc.
c. Music - each student should attempt making music (notes, sing, play instruments), act like music sounds, and/or write music (notes, verse), and/or write about noises (musical), etc.
d. Art - draw what you heard - animals, trees; draw what you heard - abstract; etc.

7. Combined Activities

a. Do similar activities in different areas of the outdoors; compare, discuss, chart, etc.
b. Make recordings (student assist) of nature sounds - listen in class, discuss; record periodically and compare one area to another or one area at different times, etc.
c. Record (written and/or tapes) sounds in specified areas periodically. Discuss, distinguish, chart, compare, or just enjoy, etc.
d. Record and compare sounds inside a classroom, different areas or the school and/or school yard or neighborhood, etc.

8. Evaluations

a. Check list
b. Teacher comments
c. Written student tests - objective, subjective
d. Verbal student tests

See samples in the Appendix

9. Suggested Further Activities

a. Continue with Sense Guides.
b. Chart sounds with what makes it.
c. Might begin combining three senses (see, feel, hear) in discussing, naming, or charting nature sounds around the nature center, school, neighborhood, etc.
d. Chart sounds, what makes the sounds, and why the sounds were made.
e. Compare different charted areas - hills, valleys, streets, fields, etc.

10. Resources

Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

When requesting plans and/or materials from the outdoor education consultant, explain what it is you plan to be doing and the outdoor education consultant will gather and send suitable materials.

This listing will be updated as more materials are acquired by the nature center. Meanwhile, please consult the I.M.C. book and film listings and those resources available from the C.C.L.P. at Fairmount School. * indicates that the materials are available at or through the Handicapped Children's Nature Study Center.

a. <u>PHONOGRAPH RECORDINGS</u>

1) "Sounds of Nature"
(Houghton Mifflin Co.) Write to:
Laboratory of Ornithology
Cornell University
Ithaca, New York 14850

2) "Sound Patterns" * Available from CCLP - Nature Center
Folkways Record FX 6130
(descriptive notes inside pocket)

Check list of phonograph recordings in Appendix

b. BOOKS

1) Learning About Nature Through Games, Musselman, V., IMC #14453 — I 570.

2) Andy All Year Round, Merriam, E., IMC #15115 — P 525.

3) My Five Senses, Aliki, IMC #11882 — P 612.

Check appendices for further books and other resources

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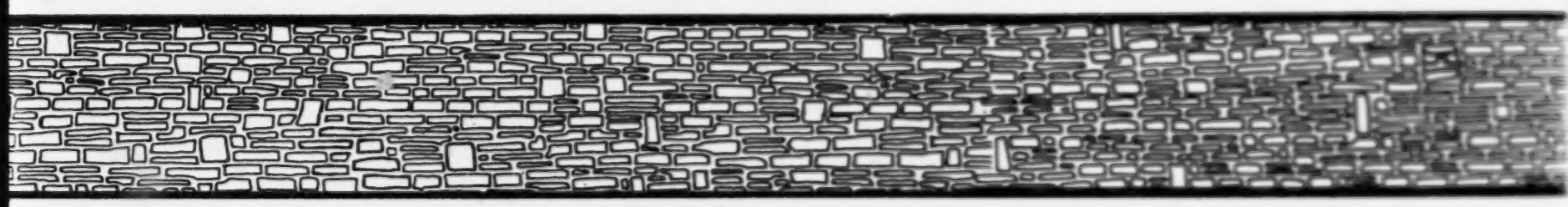

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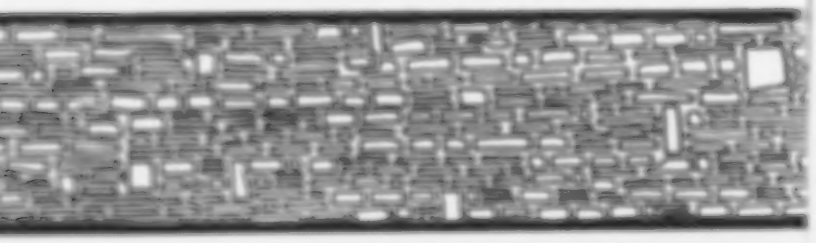
OBSERVING OUR ENVIRONMENT

THROUGH OUR SENSES



A TEACHERS GUIDE

D. To Smell

1. Aim

To begin to get the 'idea and sense' of observing our total environment through one of our senses.

2. Purpose

In order for our students to become sensitive to their environment we must help them develop the skills of thinking, seeing, and doing for themselves. The need to do this is not only for sensing and solving problems but for enjoying the beauty, serenity and mystery involved throughout our different environments.

Students need to use their senses not only in the environmental education nature center and in their classrooms, but almost more importantly, they need to use their senses with their families and friends as they grow and experience outside their school activities.

3. Educational Objectives

a. Each student should smell sweet and sour odors in nature.
b. Each student should smell musty and fresh odors in nature.
c. Each student should smell pleasant and unpleasant odors in nature.
d. Each student should be aware of cautions in smelling - paints, smoke, pollen, dust, and insects, etc.
e. Each student should smell different tree leaves, bark and pitch.
f. Each suudent should smell different soils and water.
g. Each student should smell different flowers of trees, shrubs and small plants.
h. Each student should smell country, city and farm odors.
i. Each student should smell the different seasons - winter (frost, snow, ice); spring (flowers, showers); summer (heat, pavement, dampness); fall (falling leaves, frost); etc.
j. Each student should do the above activities in different outdoor areas - street, school yard, fields, timbers, hills, valleys, and streams, etc.
k. Each student should do the above activities in different seasons.
l. Each student should learn what makes odors in nature - plants, soils, water, birds, animals and fish, etc.

m. Each student should realize that there are pleasant and unpleasant odors in nature (sweet flowers or polluting factory smoke); and should be able to recognize some.

4. Concepts

a. There are sweet and sour odors in nature.
b. There are fresh and musty odors in nature.
c. There are pleasant and unpleasant odors within the above in nature.
d. There are potential dangers in using the sense of smell - allergies, poison, snuff in foreign particles or just getting too close (bee sting, ants), etc.
e. Pleasant odors may not always be good or advisable to smell if prolonged, poisonous or foreign matter, etc.
f. Tree leaves and barks have odors and vary from one to another and to different types of trees.
g. Soils and waters have odors and may be different in different areas.
h. Many flowers have odors. They may be sweet, sour, strong, faint, pleasant, unpleasant, or pungent, etc.
i. As with other senses, each student may differ from another as to what something smells like.
j. City, country, farm, field and/or timber odors may be quite different.
k. Odors within a city, country, field, timber, or farm areas may vary.

5. Activities

a. Suggested Lead-Up Activities

1) It is suggested that the teacher check out possible outdoor areas for sense of smell activities. If the teacher is unsure - don't.
2) The teacher may want to enlist the services of a resource person. Check the list. Refer to the resource listing..
3) Go through Guide I of Unit I.
4) Go through Guide II, A, B, & C of Unit I.
5) Discuss the following activities, procedures and go over outdoor behavior.
6) Some possible sources of odors are:

flowers	wet leaves
mown hay-fresh and old	fir needles
mulch	rotting apples
pitch	creosoted telephone poles
skunk cabbage	newly cut wood
pond water	burning leaves
mud	

b. Activity Procedures and Suggested Questions

1) With a group of 8-10 (or less) students, and aide(s), the teacher should pick a spot in the out-of-doors where there are (distinctive) 'things' to smell. Ask the group the following and more, questions:

   a) What do you smell?
   b) What makes the odor?
   c) Why do some things not smell?
   d) Does the air have any odors? The ground, trees, grasses, leaves, tunnels, etc.?
   e) Why do some things smell strong? flowers, leaves, pitch, skunk, etc.
   f) What isn't good and/or safe to smell - poison ivy, pollens, mushrooms, etc.
   g) Why do some things smell only if crushed?

2) Repeat in different areas.
3) Record odors of a small area.
4) Record odors of similar areas - compare, chart, etc.
5) Record, chart, the odors of different areas and compare, etc.
6) What can be done about unpleasant odors? City, country, farm, etc. Discuss, have speakers, visit some of the polluters, and write letters to Congress, etc.

c. Materials and Definitions

8-10 students (or less)
aide(s)
teacher
possible resource person - refer to the resource list
student recorder, pencil, clipboard, paper - if desired
words used in activities and questions
resources - refer to the listing at the end of this guide

d. Time and place

Any time
Any place outdoors - preferably the Handicapped Children's Nature Study Center. Check out ahead of time for specific odors. Include hills, valleys, streams, lakes, ponds, streets, farms, fields, factories, bogs, etc. Dress accordingly.
Length - probably 1 hour - will vary with interest, the area, traveling time, weather, etc. Could be spread out into several short trips.

6. Related Curriculum Activities

Let the students be creative!

a. Recreation - carry over - family, friends. Try nature games.
b. Physical Education - deep breathing; be animals and plants that make or emit odors - skunk, fish, flowers, slough, or bog, etc.
c. Music - make music to tell what an odor is.
d. Art - draw 'noses' of nature - rabbit, deer, fish, bird, snake, insect, etc.; draw things that make odors - skunk, insects, flowers, etc.

7. Combined Activities

a. Charting, comparing, etc.
b. Project on air pollution control

8. Evaluations

a. Check list
b. Teacher comments
c. Written student tests - subjective and/or objective
d. Verbal student tests

Refer to appendices for samples

9. Suggested Further Activities

a. Continue with Sense Guides - II, E., and III.
b. Repeat Guide I periodically for review, keeping up interest.
c. Repeat Sense Guides II, A, B, & C periodically in different areas.
d. Repeat Sense Guides II, A, B, & C periodically in the same area.
e. 'Look' for, or observe new and/or different 'things' through the senses.

10. Resources - Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

When requesting plans and/or materials from the outdoor education consultant, explain what it is you plan to be doing and the outdoor education consultant will gather and send suitable materials.

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My Five Senses, Aliki, IMC #11882	P	612.

Consult the I.M.C. book listing in the appendix.
Check other appendices for further resources.

PEOPLE

County Conservation Department, Blackhawk Company
Mike Krebill - Naturalist

Scott County Park - Don Nagle - Board Administrator

Local Hobbyists

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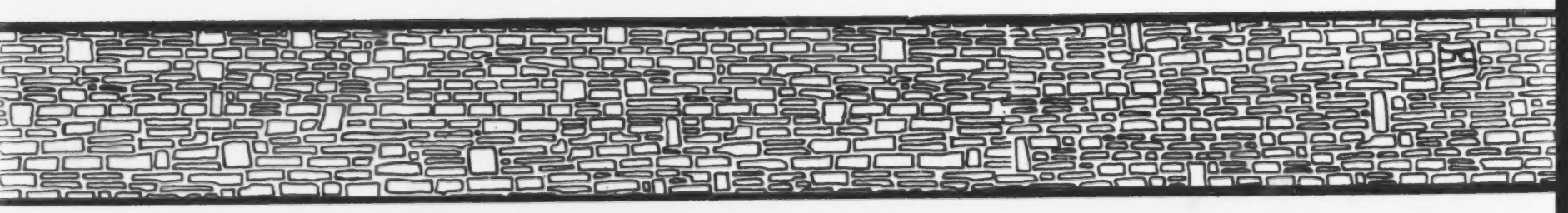

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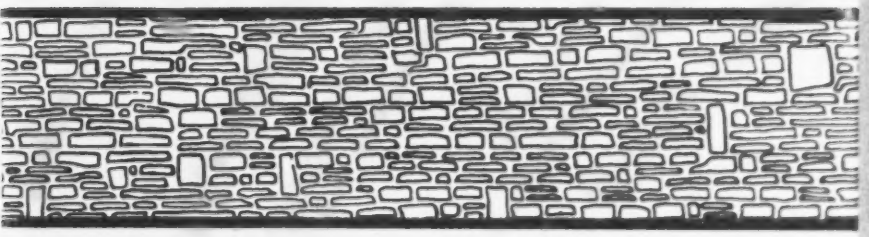


A TEACHERS GUIDE

41

E. To Taste

1. Aim

To begin to get the 'idea and sense' of observing our total environment through one of our major senses.

2. Purpose

In order for our students to become sensitive to their environment we must help them develop the skill of thinking, seeing, and doing for themselves. The need to do this is not only for sensing and solving problems but for enjoying the beauty, serenity and mystery involved throughout our different environments.

Students need to use their senses not only in the environmental education nature center and in their classrooms, but almost more importantly, they need to use their senses with their families and friends as they grow and experience <u>outside</u> their school activities.

3. Educational Objectives

a. Each student should know and practice proper outdoor behavior and understand and practice 'rules' laid down by the teacher.
b. Each student should know that there are rules to abide by in 'picking' nature's edibles.
c. Each student should taste sweet and sour in nature. (Examples are under Materials and Definitions)
d. Each student should taste salt in nature.
e. Each student should taste pleasant and unpleasant 'items' in nature.
f. Each student should taste leaves, bark, stems, shoots, and pitch of different large and small plants and shrubs. (Examples are under Materials and Definitions)
g. Each student should recognize some edible plants. (Examples are under Materials and Definitions)
h. Each student should know what makes some particular tastes.
i. Each student should prepare a dish, with guidance, that involves cooking. (Examples are under Materials and Definitions)
j. Each student should taste vegetables from different gardens and hot houses; and different soils and waters.
k. Each student should chart tastes of a particular area - different gardens and/or hot houses, etc.

1. Each student should be aware that many vegetables, fruits, water, and animal life are often polluted by man.

4. Concepts

a. As with other senses, each student may differ in sensitivity of taste - something may be very tart to one and another barely able to get a tart taste, or another may taste it as not tart at all but sweet.
b. As with smell, or maybe even more so, carrying out taste activities must be done with great caution.
c. There are sweet and sour things to taste in nature.
d. There is natural salt in nature - ocean, grasses, etc.
e. There are chemicals in nature that give different tastes - some stronger than others.
f. Leaves, bark, shoots, and/or pitch of different species may differ from one area to another.
g. The same specie may vary in taste from one area to another.
h. There are roots, stems, shoots, leaves and fruits that are poisonous unless prepared in certain ways; boiled, combined with other things, ground, peeled, dried, roasted, steamed, etc.
i. Parts of some plants are edible as is.
j. Parts of some edible plants are palatable only when prepared in certain ways - boiled, combined with other things, ground, peeled, dried, roasted or steamed, etc.
k. Some things are used only for flavoring - herbs, spices; or, as garnishes - onions, etc.

5. Activities

a. Suggested Lead-Up Activities

1) Go through Guide I of Unit I.
2) Go through Guide II, A, B, C, & D of Unit I.
3) Discuss following activities, procedures and outdoor behavior.
4) Check out possible outdoor areas for 'tasting' activities.
5) Behavior and what to and not to taste and following teacher 'orders' should be understood before starting any tasting activities.

6) Collecting must be done with guidance and in areas checked out and ok'd by the teacher and/or resource person.
7) Sample items should not be picked except for specific purposes, and they should be taken only from inconspicuous spots where there are plenty of others like it. Collecting must be done only where it won't show and only just small amounts.

b. Activity Procedures and Suggested Questions

1) After following Lead-Up Activities 4 and 5, in small groups, preferably 4-6, and aide(s), teacher has group taste nature in an out-of-door area (previously checked out for 'things' to taste). Record what was tasted and reactions and thoughts as to what specific tastes might be and/or what made them.
2) Collect and cook 'dishes' from nature - beverage, vegetable, soup, syrup, etc.
3) Collect and make dishes without cooking - gum, dried (fruit, corn), salad, herbs, beverages, etc.
4) Chart tastes of a small particular area.
5) Taste soils and waters in different areas.

c. Materials and Definitions

4-6 students, aide(s), teacher
Student recorder, pencil, clipboard, paper, if desired
Words - used in activities and questions
Resources - refer to list at the end of the guide
Whatever needed to prepare - pots for boiling, bowls, cups, spoons, knives, grinder (rocks), salt
Maybe a resource person knowledgeable with a specific area - refer to the resource list

Suggested common items for 'Tasting'

Root - carrot, beet, potato (white, sweet, yam), radish, parsnip, turnip
Stem - rhubarb, asparagus, hickory shoots, milk weed shoots
Leaf - onion (underground), lettuce, spinach, brussel sprouts, cabbage, mustard, parsley, waterleaf, wild lettuce, dock, lamb's quarter, Swisschard, kale, watercress, dandelion, burdock, goats beard
Flower - broccoli, cauliflower
Seed -bean (lima, blackeyed, pole), pea, corn, okra
Fruit - tomato, apple (cider), cucumber, egg plant, melons (honey dew, musk, water), pepper (red, green), pumpkin, squash, berries (straw, black, blue, huckle, goose, rasp, boysen), grapes, hawthorne, paw paw, persimmon
Sap - maple, boxelder, walnut, hickories, birches
Birds - partridge, pheasant, quail
Tea - sumac, coffeetree, sassafras, basswood
Spices - cinnamon, clove, nutmeg
Herbs - chives, parsley, dill
Sweet - berries, melons
Sour - berries, lemons, grapefruit, persimmon
Salt - ocean, grass

d. Time and Place

Any time
Place - preferably the Handicapped Children's Nature Study Center.
Check any area you plan to use ahead of time for acceptable 'things' to taste.
Length - probably 45-60 minutes

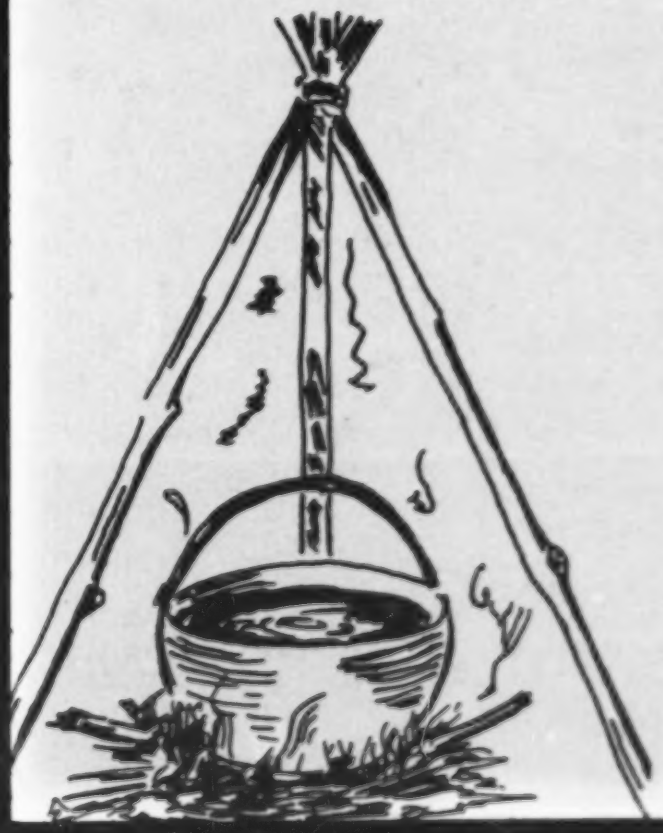
6. Related Curriculum Activities

a. Recreation - cooking and/or preparing a meal; health aspects of tasting in the out-of-doors; social living; etc.
b. Physical Education - imitate some things tastes - cabbage, corn, tree, nut, rabbit, partridge, etc.
c. Music - make up songs about nature as it is growing; about nature being prepared for a meal, etc.
d. Art - draw 'items' eaten; draw items before and after being cooked or prepared to eat; chart or make a mural of vegetables growing from seed, to being picked, to being prepared for a meal; etc.

7. Combined Activities

a. Make a meal using 'items' from nature - gardens, hot houses - do this with guidance, such as a resource person.
b. Make a meal <u>in</u> the out-of-doors using 'items' from nature.
c. Carry through on pollution suggestions - letters, visits, clean up.
d. 'Taste' in new different areas.

8. Evaluations



a. Check list
b. Teachers comments
c. Written student test - subjective and/or objective
d. Verbal student tests

Samples are in the appendix.

9. Suggested Further Activities

a. Carry out Guide III of Unit A
b. Make class gardens
c. Make window gardens
d. Check out, prepare, and taste animals:

rabbit	pheasant	quail	fish
duck	squirrel	frog	dove
partridge			

10. Resources - Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

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My Five Senses, Aliki, IMC #11802 — P 612.

Edible Wild Plants of eastern North America, Fernald, Merit L., & Kinsey, Alfred C., Harper & Brothers, Revised 1958, 452 pp., $6.00

Edible Wild Plants, Madeger, Gilbert Perry, The Macmillan Company, 1963, 323 pp., $5.95

Some Common Edible and Poisonous Mushrooms, U.S. Department of Agriculture #706

The Outdoorsman's Cookbook, Carhart, Arthur H., The Macmillan Company, N.Y., Revised 1959, 211 pp.

Check appendices for further resources

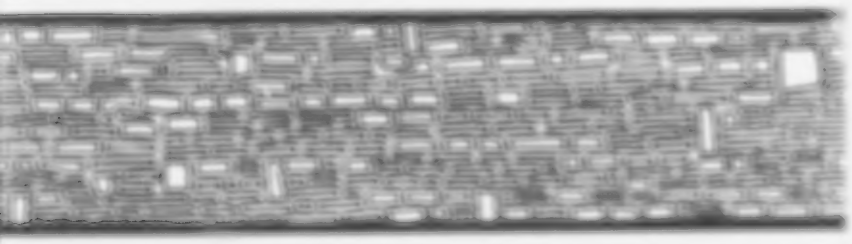
The Handicapped Children's Nature Study Center
a Title III, E.S.E.A., project

Administered by
Muscatine-Scott County School System
1523 S. Fairmount
Davenport, Iowa 52802

Dr. Paul J. Stankey, Director
Clara A. Emlen, Consultant

OBSERVING OUR ENVIRONMENT

THROUGH OUR SENSES



A TEACHERS GUIDE

III. COMPREHENSIVE OVERVIEW OF FIVE SENSES

A. Aim

For each student to use each of his five senses as a whole (together) in more than one natural environment, at different times of the day and in different seasons.

B. Purpose

To bring together each of our five major senses while bringing together a feeling of the total natural environment and its interrelatedness - (remembering that the senses of taste and smell are often not safe to use).

C. Educational Objectives

1. Each student should carry out objectives of each of the previous five guides.
2. Each student should use the four senses of see, hear, feel and smell in a very small area.
3. Each student should use the four senses of see, hear, feel and smell in a large open area.
4. Each student should use the four senses of see, hear, feel and smell in describing a certain area.
5. Each student should use the four senses of see, hear, feel and smell in showing interrelationships of a certain area.
6. Each student should use the four senses of see, hear, feel and smell in distinguishing one area from another.
7. Each student should use the taste sense under guidance in each of the above and below.
8. Each student should use the four senses of see, hear, feel and smell to make a map, chart, lay out of certain areas, etc.
9. Each student should 'note' how 'things' in wildlife use their five senses.
10. Each student should discuss, chart, etc., the senses of wildlife.
11. Each student should be able to state why the senses smell and taste are not used very often; and the rules for using them.
12. Each student should use four senses in small and large areas in different seasons of the year.
13. Each student should use four senses in small and large areas during different times of the day.
14. Each student should 'chart' four senses in more than one season.
15. Each student should 'chart' four senses during more than one period of the day.

D. Concepts

1. It is important (essential) to realize and practice <u>with guidance</u> the use of all senses in out-of-doors.
2. All five senses can be used to help understand and learn about a very small area within nature.
3. Use of the five major senses may reveal similar or different 'things' in a large area - within itself and/or compared to small areas.
4. All five senses can quite adequately describe nature.
5. Taste and smell senses need guidance - safety.
6. Areas can be described via all five senses and charted, mapped, listed, etc.
7. 'Things' in nature use their senses also. Some the same, some different; some for the same reasons, some for different reasons.
8. Through our five major senses areas may differ from one season to another.
9. Through our five major senses, outdoor education areas may differ from one time of the day to another.

E. Activities

1. Suggested Lead-Up Activities

   a. Carry out Guides I and II, A, B, C, and D of Unit I.

2. Activity Procedures and Suggested Questions

   a. Have small groups of students use all five senses in a specified small area - can be verbal, listing, charting, mapping, or just mentally observing.
   Share with the total group.
   Use questions from other guides.
   What do you see, feel, hear, smell and taste? Names of 'things' in nature aren't as important as the descriptions.
   Try describing things by different combinations of senses - eyes closed, just smell and feel, no feeling, etc.

   b. Same for larger area

      Might assign one sense per student or one student per small area of larger areas - chart, map, as larger group - compare areas within large areas.

   c. Have students discuss how the 5 senses are used to live and survive; chart, sketch; etc.

   d. Have students discuss interrelationships of 'things' that they have found in their area - plants, animals, weather, soils, water, humans, insects, etc.

e. Compare one area with another type of area.

f. Have students 'track' some wildlife - foot tracks, odors, dropping, rubbings, scratching, etc.

g. Do any of the previous activities in different seasons.

h. Do any of the previous activities at different times of the day.

i. Do any of the previous activities during different weather - clear, sunny, cold, wet, hot, rainy, snowy, etc.

3. Materials and Definitions

Student recorders, pencils, paper, clipboard, if desired
Resources - Please refer to the listing at the end of Guide III and the end of Unit I.

4. Time and Place

Different times and places in the out-of-doors
Length - an hour, plus - repeats, charting, mapping, discussing, etc.

F. Related Curriculum Activities

1. Recreation

a. Plan and carry out - family and/or friends - trips to similar areas and have them use their senses.

b. Nature games with family, friends, classmates, etc.

2. Physical Education

Physically be things in nature - smelling, seeing, hearing, tasting, feeling. How do they move? Does everything move? Try being the weather, soils, temperature, rocks, vegetables, fruits, etc.

3. Music

Might make a plan and/or musical - of animal senses or humans using their senses.

4. Art

   a. Make a mural of related 'things' in nature - those noted by your (students) senses, and/or those using their (wildlife) senses.
   b. Sketch natural 'things' using senses.
   c. Encourage students to create, to use their imagination in their artistic ways - charcoal, pencil, crayons, paste, paper, chalk, clay, etc.

G. Evaluations

1. Check lists
2. Teacher comments
3. Written student tests - objective and/or subjective
4. Verbal student tests

See appendices

H. Suggested Further Activities

Have the students pretend they are blind for a period of time during 'normal' outdoor activities.

I. Resources

Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

When requesting plans and/or materials from the outdoor education consultant, explain what it is you plan to be doing and the outdoor education consultant will gather and send suitable materials.

This listing will be updated as more materials are acquired by the nature center. Meanwhile, please consult the I.M.C. book and film listings and those resources available from the C.C.L.P. at Fairmount School. (* indicated that materials are available at or through the Handicapped Children's Nature Study Center.)

FILMS

1. "How We Look at Things" — $10.00
   Kalamazoo Nature Center — 27 minutes
   7000 North Westnedge — color, sound, 16 mm
   Kalamazoo, Michigan 49001

2. "Patterns of the Wild"
   U.S. Forest Service
   U.S. Department of Agriculture
   Washington, D. C. 20250

Check appendices for further films

PHONOGRAPH RECORDINGS

1. "Sounds of Nature" — About $6.00 each
   (Houghton Mifflin Co.) Write to:
   Laboratory of Ornithology
   Cornell University
   Ithaca, New York k4850

2. *"Sound Patterns" — CCLP - available from
   Folkways Record FX 6130 — Nature Study Center
   (descriptive notes inside pocket)

Check appendices for further records

CHARTS, PAMPHLETS, BOOKLETS, POSTERS

1. *National Audubon Society — Nature Study Center has some
   1130 Fifth Avenue — materials on birds and mammals
   New York, New York 10028

2. Boy Scout Merit Badge Pamphlets
   Wildlife, Mammals, Birds, etc. - 35¢ each

3. *Gull Lake Environmental Education Project — Nature Center has some
   Kellog Bird Sanctuary — charts and slides on
   Route 1, Box 339 — pond life, birds and
   Augusta, Michigan 49012 — mammals

BOOKS

1. My Five Senses, Aliki, IMC #11882 — P 612.

2. Andy All Year Round, Merriam, E., IMC #15115 — P 525.

3. Learning About Nature Through Games, Musselman, V., IMC #14453 — I 370.

Check appendices for further books and other resources

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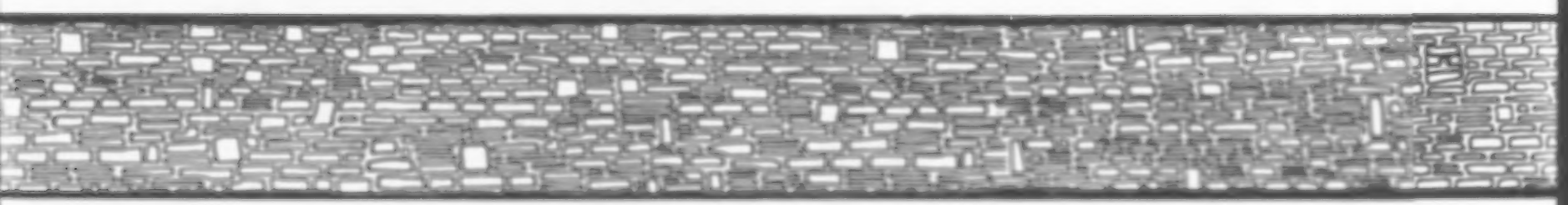

Dr. Paul J. Staskey, Director
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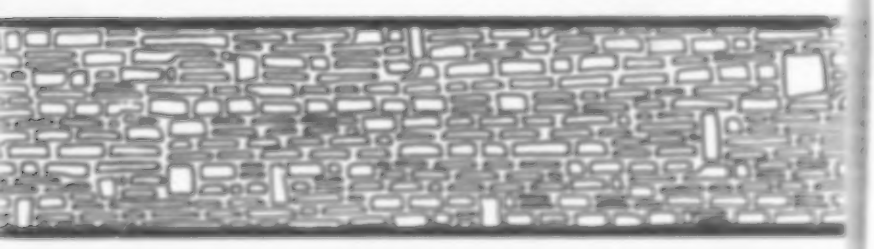
OBSERVING OUR ENVIRONMENT

THROUGH OUR SENSES



A TEACHERS GUIDE

Bibliography
Writers' References for all
Guides in Unit I

Teaching in the Outdoors

Donald R. Hammerman & William M. Hammerman
Burgess Publishing Co., Minneapolis, Minnesota
1964, 120 pp.

Outdoor Education

Julian W. Smith, American Association
for Health,
Physical Education & Recreation, 1964, 32 pp.

Outdoor Education

Charles L. Mand, J. Lowell Pratt & Co.
New York, 1967, 180 pp.

Outdoor Education

Julian W. Smith, Reynold E. Carlson, George W. Donaldson,
Hugh B. Masters, Prentice-Hall, Inc.
New Jersey, 1963, 322 pp.

Conservation Experiences for Children

Bulletin 1957, No. 16
Effie G. Bathurst, Wilhemina Hill,
U.S. Dept. of Health, Education & Welfare, 75¢

Outdoor Education in Oregon Schools

State Department of Education
Salem, Oregon, 1968, 118 pp.

Conservation Tools for Educators, Putting Conservation to Work

U.S. Department of Agriculture
Forest Service, Pacific Northwest Region
1968, 76 pp.

Putting Conservation to Work, Tools to Help Teachers Put Conservation to Work in the Existing Curriculum

U.S. Department of Agriculture
Forest Service, Pacific Northwest Region
1964, 32 pp.

Putting Conservation to Work, Elementary School Activities

Department of Agriculture, U.S. Forest Service
Portland, Oregon
1964

Field Study Manual for Outdoor Learning

Margaret Milliken, Austin F. Hamer, Ernest C. McDonald
Burgess Publishing Co.
Minneapolis, Minnesota

Methods in Conservation and Outdoor Education, Observing Our Environment

Oregon State System of Higher Education
Ernest C. McDonald, Television Instructor
Off-Campus Instruction Programs
Portland Center for Continuing Education
Post Office Box 1491
Portland, Oregon 97207
1969, 42 pp.

S A M P L E

TEACHER COMMENTS ON BEHAVIOR

Unit I Guide I

(Note - These are more comments on behavior, rather than actual learning. This is just a sample. Each teacher would add or delete types of comments.)

(Teacher has observed student 'A' throughout the outdoor education lessons.)

'A' participated with the rest of the class in most of the activities. He verbalized what he saw. Seemed to have trouble hearing some sounds; seems to understand the volume, pitch and quality, though. Maybe he needs more practice. Carried out all feeling activities. He wasn't interested in the smelling sense activities, but did smell the items. Really seemed disinterested in the tasting activities. Watched the other students but seemed to be pre-occupied with dislike (?) or something else, rather than the differences of tastes. Perhaps 'A' became tired or wasn't feeling well. Or, maybe he is afraid to taste or has tried the items before and really doesn't like them, or has been punished? Perhaps 'A' just needs patience and practice.

Review - Repeated similar activities. Pretty much the same as above. Although, did seem somewhat more interested in smelling and tasted two items, briefly. Still no indication as to real problems, if any, other than patience and practice. He remembered the words sweet and sour.

S A M P L E

SUBJECTIVE TESTS

Unit I Guide I

1. Write a story about your taking a friend into nature and showing him how to observe using his five major senses.

2. Have students 'observe' an area for a few minutes - then go to their desk (clipboard) and write down what they 'saw' through their five major senses. (You might try this first, then have the outdoor education lesson, then observe and write again.) Allow the students to compare their writing differences as well as the teacher, to note learning differences.

3. Write a short paragraph on each of your five major senses - see, hear, feel, smell and touch.

4. Write a story about how the animals you saw today can use all their senses.

5. When you observe an outdoor area - what do you do?

6. Does everyone 'see' the same thing(s)? Why or why not?

7. Wildlife eat wild plants in nature; therefore, it is all right for humans to do the same. Why or why not?

8. 'A breeze can be seen'. This can be both true and false. Explain.

9. Describe what you saw when we 'looked' out the window.

10. Describe the three objects you felt on the front table.

S A M P L E

OBJECTIVE TESTS

Unit I Guide I

These are definitely sample questions. Each teacher's test will need to be made up according to her students as well as to her teaching methods and contents. Some of the following questions are duplications of materials in different types of questions. Some are elementary, some more advanced.

1. What did you see up high? On the ground? Way far off?
   List

2. What differences are felt in nature?
   List

3. With which sense did we use the following words?

Levels	Distress
Volumes	Happy
Qualities	Calling

4. Where were these odors noticed? Matching.

Radiators	Hall
Wood	Basement
Paint	Classroom
Fumes	Library
Fresh	Floor
Clean	Front Hall
	Window

5. Wildlife eat wild plants in nature; therefore, it is all right for humans to do the same. True or false

6. Use each of the following vocabulary words in a sentence:

Shape	Sweet
Size	Musty
Texture	
Rough	Use words <u>your</u> students are learning
Thin	

7. State the five levels at which we practiced looking in nature.

8. After feeling the three items on the front table, describe the texture of each.

9. As the teacher produces a sound, list what you hear. (Might have the students also, state the level and/or volume.)

10. Taste the three items on the front table and list their tastes according to the correct number what the taste is.

1 2 3

11. On our hike what did you smell? List the things.

Musty	Paint
Fresh	Factory

12. Which <u>one</u> of the following belongs to the taste sense? Circle.

Color	Loud	Salt
Bumpy	Musty	

13. Which of the following might be used in describing more than one sense? List the senses after each. (Or, just have the students list one sense for each.)

Hot	Large
Onion	Round
Sweet	Color
Pleasant	Sharp
Soft	Bumpy

14. List the rule(s) we learned regarding the sense of taste.

15. List seven 'things' you observed when we looked out the window.

S A M P L E

VERBAL TESTS OF STUDENTS KNOWLEDGES

Unit I Guide I

Small groups. Teacher asks questions. Students either answer verbally, point out the item, draw on the blackboard or demonstrate, etc.

Without Looking -

1. What shapes did you see out the window?
2. What colors (and/or shades) did you see in the distance? Up high?
3. What things look similar, but feel different?
4. Does the wood of a tree make noise? The wood of the floor?
5. What did we smell near the window that was different from near our desks?
6. What did the leaf taste like? Sweet? Bitter?
7. State a rule dealing with the sense of taste.

Continue using questions from "Suggested Questions"; preferably those you, the teacher, has used pertaining directly to your own students capabilities and abilities.

RESOURCES SUITABLE FOR ALL LESSON GUIDES

Suggested resources for lead-up and further activities can be requested from or through the outdoor education consultant or directly from listed addresses.

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* indicates that the materials are available at or through the Handicapped Children's Nature Study Center.

FILMS

"How We Look at Things"
Kalamazoo Nature Center
7000 North Westnedge
Kalamazoo, Michigan 49001

$10.00 rental
27 minutes
color, sound, 16 mm.

"Patterns of the Wild"
U.S. Forest Service
U.S. Department of Agriculture
Washington, D. C. 20250

University of Iowa, Iowa City, Iowa 52240
Audiovisual Center, Division of Extension and University Services
Write for Catalogue of Educational Films and rental fees - or, contact the outdoor education consultant to place the order. A few titles:

"Animal Tracks and Signs"
"Animals and How They Communicate"
"Animals and Their Foods"
"Animals and Their Homes"
"Animals are Different and Alike"
"We Explore the Woodland"
"We Explore the Stream"
"We Explore the Field and Meadow"
"How Animals Live in the Winter"
"Five Colorful Birds"

Iowa State Conservation Commission
Write for Film and Slide Catalogue and ordering information or contact the outdoor education consultant to place order. A few titles of films:

"Exploring the Farmland"
"The Living Mammal"
"Way of Life"
"Yours for a Song"
"Conservation and Balance in Nature"
"Life in a Woodlot"
"Spring Comes to the Woodlands"
"World in a Marsh"

A few titles of 35 mm slides:

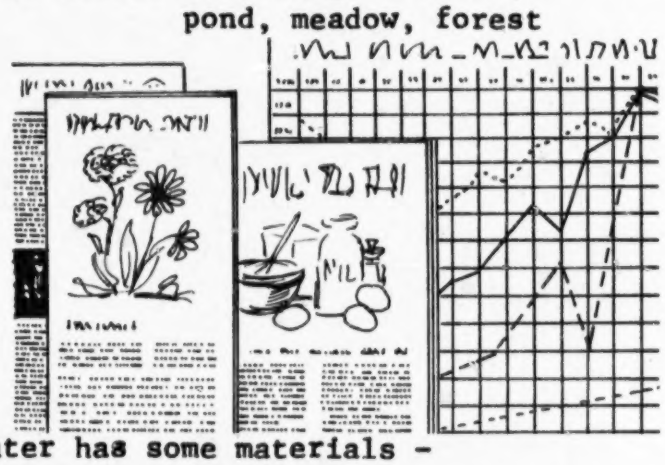
"Wild Plants and Blossoms"
"Woodland Flowers"
"Yellow River Forest"

For additional films see the IMC film catalogue

PHONOGRAPH RECORDINGS

"Sounds of Nature"
(Houghton Mifflin Co.) Write to:
Laboratory of Ornithology
Cornell University
Ithaca, New York 14850

"Barnyard Animals" - and other similar good nature recordings - birds, pond, meadow, forest
Droll Yankees Inc.
Providence, Rhode Island 02906



* "Sound Patterns"
Folkways Record FX 6130
(descriptive notes inside pocket)

Check appendices for further records

CHARTS, BOOKLETS, FLASHCARDS, POSTERS

* National Audubon Society
1130 Fifth Avenue
New York, New York 10028
Nature Center has some materials - bird, mammal and pond life charts and pamphlets

* Gull Lake Environmental Educ. Project
Kellog Bird Sanctuary
Route 1, Box 339
Augusta, Michigan 49012
Nature Center has charts on pond life, birds and mammals; also, slide sets and tapes on pond life and mammals

Teach Me About Series
McGraw-Hill Book Company
330 West 42nd Street
New York, New York 10036

National Wildlife Federation
1412 16th Street, N.W.
Washington, D. C. 20036

Nature Press
East 20th Street
Alton, Illinois 62002

* Iowa State College, Publications Office (Ames, Iowa)
P-3 "Fur Bearers and Game Mammals of Iowa"
P-67 "East Iowa Fish"
Y-2 "Common Hawks and Owls of Iowa"

Packet of Nature Study Projects and Nature Photos
John A. Gustafson, Treasurer
American Nature Study Society
R.F.D. #1
Homer, New York 13077

Boy Scout Merit Badge Pamphlets
Wildlife, Mammals, Birds, etc. - 35¢ each

Society for Visual Education, Inc.
1345 Diversey Parkway
Chicago, Illinois 60614

BOOKS

Audubon Nature Encyclopedia - Fairmount School has a set

Encyclopedias with wildlife plates

Encyclopedia Brittanica

Golden Book Nature Series for Children

Life Nature Library Series

Learning About Nature Through Games, Musselman, V., IMC #14453 — I 570.

Andy All Year Round, Merriam, E., IMC #15115 — P 525.

My Five Senses, Aliki, IMC #11882 — P 612.

For further IMC books please refer to the IMC listing appendix and/or the IMC sprial bound list of books.

MAGAZINES

Audubon - National Audubon Society

National Wildlife - National Wildlife Federation

Ranger Rick - National Wildlife Federation

* The Conservationist - New York State Conservation Department

Outdoor World - Preston Publishing Company

National Geographic - National Geographic Society

* Nature and Science - American Museum of Natural History (recent copies)

BOOKS
For Lead-Up and/or Further Activities
From the I.M.C. - Davenport
With Comments

Order directly from the I.M.C. This listing will be updated as additional books are reviewed.

K - 6

NATURE STUDY

Small Pets From Woods and Fields, Buck, M. W., IMC #11401 P.I. - 574.
Very good, illustrated.

Learning About Nature Through Games, Musselman, V., I. - 570.
IMC #14453 - Very good, games for senses - see, hear, feel, taste, smell

SENSES

Andy All Year Round, Merriam, E., IMC #15115 P. - 525.
Very good; uses senses in different seasons in the outdoors

Taste, Touch, and Smell, Adler, I., IMC #16105 I. - 152.00
Good, but science class oriented rather than outdoors

Your Eyes, Adler, I., IMC #11587 P.I. - 612.84
Good, but science class oriented rather than outdoors

My Five Senses, Aliki, IMC #11882 P. - 612.
Good - basic

Understanding Your Senses, Gilmour, A., IMC #14261 I.J. - 612.
Good, but science class oriented rather than outdoors

Windows on the World, White, A., IMC #15904 I.J. - 152.10
Good, some nature

Our Senses and How They Work, Zim, H. S., IMC #11581 I. - 612.
Good, but science class oriented rather than outdoor environment

ANIMALS

Language of Animals, Selsam, M. E., IMC #11468 — I.J. - 591.
Good - illustrated

BIRDS

Attracting Birds, Davison, V., IMC #16759 — J.S. - 598.00
Very good, although advanced-teacher background.
Mainly text. House and feeder instructions.

First Book of Birds, Williamson, M., IMC #11531 — I.J. - 598.
Very good - drawings

ECOLOGY

Ecology (Life Nature Library), Farb, P., IMC #15095 — I.J. - 574.5
Good, although somewhat advanced; text and photos

FOLK SONGS

Animal Folk Songs for Children, Seeger, IMC #13168 — J.S. - 784.4
Seems it could be used with E. and I. - illustrated

NATURE

In Ponds and Streams, Buck, M. W., IMC #11808 — I.J. - 574.92
Very good - well illustrated, black and white sketches

NATURE STUDY

Winter Science Activities, Youngpeter, J., IMC #16386 — I.J. - 507.20
Very well written; illustrated; gets interest up

WILDLIFE - CONSERVATION

First Book of Wildlife Sanctuaries, Harrison, C. W., — I.J. - 333.7
IMC #11047
Good - illustrated - photos

Center for Children With Learning Problems

PHONOGRAPH RECORDINGS

Requests for recordings may be made through the Outdoor Education Consultant at the Nature Study Center. This listing will be updated as additional records are added to the library.

* Particularly suited to 'sense' guides

	Consultant's Comments
"Sounds of Animals" - Zoo and Farm Foldways Records - FPX6124 (descriptive notes in pocket)	Good, although not "Wildlife" of North America
"Sounds of the American Southwest" Folkways Records and Service Corporation FX6122 (illustrated notes in pocket)	Very good
"Sounds of a Tropical Rain Forest in America" Folkways Records and Service Corporation FX6120 (illustrated notes in pocket)	Very good
"The Birds World of Song" Folkways Records FX 6115 (Birds Around a Maryland Farmhouse) (descriptive notes in pocket)	Very good
"Sounds of the Sea", Vol. I Folkways Records and Service Corporation FX6121 (descriptive notes inside pocket)	Advanced, Science
"American Bird Songs", Vol. II 07-0103 (R137) Cornell University Records Ithaca, New York	Very good
"American Bird Songs", Vol. I 070102 - (R136) Cornell University Records Ithaca, New York	Very good

		Consultant's Comments
	"More Nature Songs", Marais and Miranda 07-0163 MR-0320 Motivation Records Division of Argosy Music Corp. New York, New York (word sheets included)	Fair
	"Nature Songs" 07-0162 MR-0318 (same as preceding)	Fair
	"Experiment Songs" 07-0164 MR-0316 (same as above)	Fair
*	"Sound Patterns" Folkways Record FX6130 (descriptive notes inside pocket)	Particularly good for this set of lesson guides - "Observing Our Environment".
	"Weather Songs" 07-0161 MR-0322 (same as "Experiment Songs")	Fair
	"Energy and Motion Songs" 08-0165 MR-0314 (same as "Experiment Songs")	Fair
	"Space Songs" 07-9166 MR-0312 Words included (same as above)	Fair
	"Sounds of the Junkyard" Folkways Records FX6143 (descriptive notes are NOT in pocket)	Fair -- but, not nature

FILMS

For possible use with 'Observing' unit

Additional films available from the Area IX Instructional Materials Center, Davenport, Iowa. These titles may be ordered directly from the I.M.C.

Animals

03630 - "Animal Habits"	IJS
03581 - "Animals and Their Homes"	PI
03738 - "Animals at Work in Nature"	PI
03544 - "Animals in Spring"	PI
03479 - "Animals - Ways They Eat"	PI
03837 - "Animals - Ways They Move"	PI
03507 - "Behavior in Animals and Plants"	JS
03670 - "Camouflage in Nature Thru Form & Color"	IJ
03584 - "Common Animals of the Woods"	PI
03672 - "How Animals Move"	PI
03769 - "How Living Things Change"	JS
03884 - "How Nature Protects Animals"	IJS
03828 - "Living and Non-Living Things"	PI

Biology

03480 - "Life in the Forest"	IJS
03082 - "What is Ecology"	JS

Earth Science

03782 - "What do We See in the Sky"	P

For further films please consult the IMC spiral bound books under the following titles:

Animals; Birds
Conservation and Natural Resources
Earth
Ecology
Farm and Ranch Life
  Cattle, Agriculture, Gardening
Water and Water Supply
Weather - Climate

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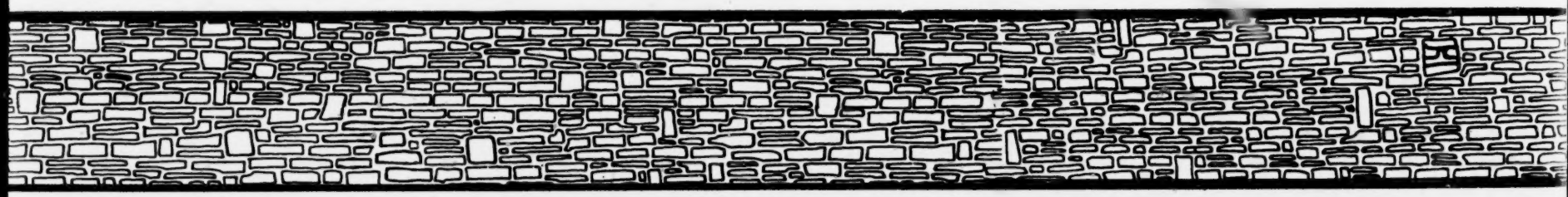

Dr. Paul J. Staskey, Director
Clara A. Emlen, Consultant

HANDICAPPED CHILDREN'S

NATURE STUDY CENTER

A TEACHERS GUIDE

= 75

DIKE HIKE

Station #1. **See** - What shape is the tree? Its branches?
What is the color(s) of the ground?
What do you see at eye level - to your right, front, left, behind?
What is overhead? Sky, clouds, etc.?
What is close to the ground? Tracks, pebbles, glass, etc.?
Did something fly by? Juncos, English sparrows, etc.?

Hear - Lumber mill, tractor
Highway
Wind in the grass and weeds
Juncos, Cardinals, Woodpeckers, etc.

Feel - Wind
Uneven ground
Bark and buds of willow

Smell - Lumber being freshly cut
Smoke
Trash
Fresh wind

Taste - Berries or other wild fruits, if available

Station #2. Why (maybe) is this an open area?
Does anyone see a hole in a tree, down low?
Are there birds in the distance? Up high?
What are the wooden stakes for?
Are all the trees alive? How can you tell a live tree from a dead one?
What is the same height as you, close by?
What size footprints can you see?
Which way is north? How do you know?

Station #3. What is squeaking? Why?
What color(s) are the new branches and buds?
Can you see the sky overhead?
Is there litter nearby? How might it have gotten there?
What do you see very close to the ground? Prints, shells, tire marks, insects, etc.?
Can you hear any different sounds? Where are they coming from? What do they seem to be saying?

Station #4. Face the Mississippi River. Which direction are you facing?
Where is the sun?
What does the sky look like? Colors, shapes, skyline, etc.?
What do you see in this direction? Railroad, highway, ditch, trees, clouds, etc.?
Turn north - do the trees in front of you look different from the trees to the right? How?
Where are the bird sounds coming from?

Station #5. Are there any domesticated animals making noises? What does domesticated mean?
What is overhead? Clouds? Size, shape, moving? Which direction?
Is there something weeping in the distance? Weeping willow.
Why does it still have its leaves?
What might live in the pond? Algae, frogs, salamanders, fish, etc.
What might live nearby that needs water to live? Birds, rats, raccoon, mice, muskrats, etc.?

Station #6. What can you smell - nearby factory, lumber mill, trucks on River Drive, etc.?
What can you hear? Birds, wind in the weeds, etc.?
What might the temperature be?
Are these the same kind of birds that were at the beginning on the dike?
How come the tree is broken - wind, snow, disease, decay, too much water, not enough water, etc.?
Can you find something that is pointed and sticks to your clothing?
What are the birds eating? How do they open them?

Return - Walk back the same way you came- stopping at the same stations - observe the same things, and/or observe (see, feel, hear, smell) new things.

Or, you could walk directly back along the dike, noting the differences (if any) of just walking without stopping and observing.

Or, take the loop trail from the pond back through the wooded areas. Depending on your time and objectives - just walk, or 'look' for 'things' along the way similar to what you observed along the dike, maybe stopping occassionally for closer observation and/or discussion.

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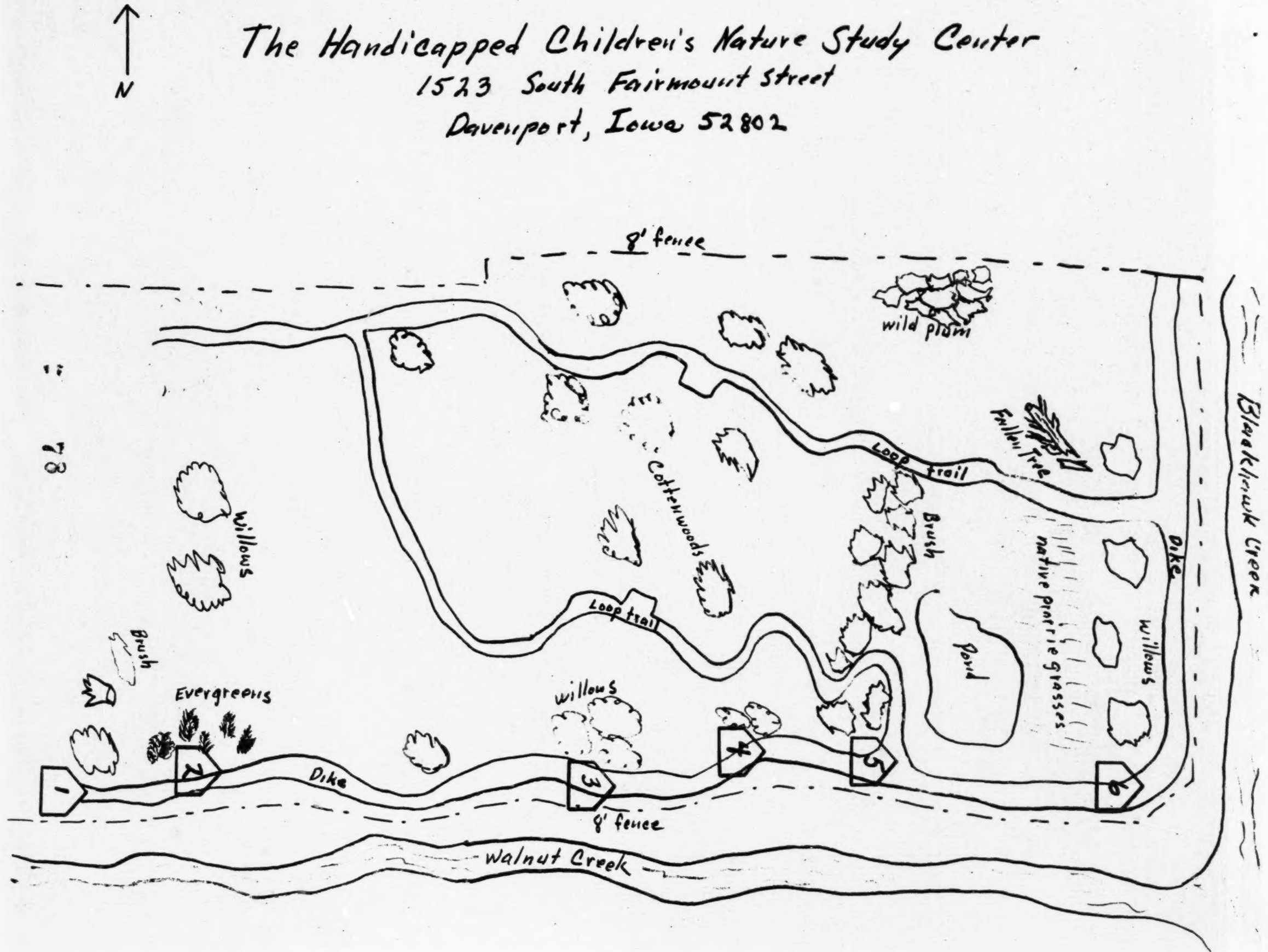

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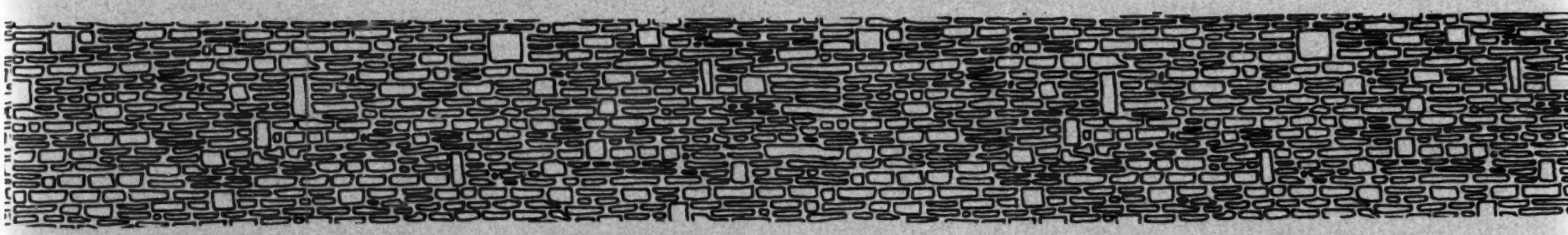

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HANDICAPPED CHILDREN'S

NATURE STUDY CENTER

A TEACHERS GUIDE

80

FALL WALK

A. Aim

To begin observing in a natural environment.

B. Purpose

For a group to be in a natural area and experiment with all five senses in observing (seeing, feeling, hearing, smelling and tasting) the area.

C. Objectives

1. Each student should walk quietly and slowly through the nature area.
2. Each student should see the soils, plants (large and small), wildlife, water, weather - colors, shades, sizes, shapes, etc.
3. Each student should touch the plants, soils, water, weather, and maybe some wildlife - texture, size, shape, temperature, etc.
4. Each student should listen to the total nature area; then listen to the plants, the animals, the soils, the water, and the weather - high, low; loud, soft; close, far; full, thin, etc.
5. Each student should smell the plants, soils, water, weather and maybe some animals - sweet, sour, pleasant, unpleasant, spoiled, dead, fresh, musty, etc.
6. Each student should observe (see, feel, hear, smell) living, dead, and inanimate 'things' in the nature area - trees, stumps, soils, bugs, waters, air, etc.
7. Each student should know and respect 'rules' regarding the sense of taste.

D. Concepts

1. A natural environment is different from a classroom.
2. There are living and dead and inanimate things in a natural area.
3. There are different and varied colors and shades in nature.
4. There are different and varied sizes, shapes, and textures in nature.
5. There are different and varied odors in nature.
6. There are different and varied sounds in nature.
7. There are rules of safety and health regarding the sense of taste.
8. There are different and varied tastes in nature.

E. Activities

1. Suggested Lead-Up Activities

a. None specifically - Take the group on the walk and see how the group does or doesn't acquire interest in 'observing'.
b. Discuss the activity behavior. What might you see, hear, feel, smell and/or taste in the out-of-doors?
c. Go over rules for sense of taste. The teacher and/or resource teacher must check ahead of time for specific items suitable for tasting.
d. Go through any or all of the Guides of Unit I.

2. Activity Procedures and Suggested Questions

Station #1 - Teacher and aides with small groups (6-8-10) of students start to walk slowly and quietly from where the dike starts at the edge of the south east corner of the sodded area next to a black willow tree.

As the group comes to each suggested station the teacher and/or aides ask questions to get the students to think, to explore, to become involved. Not all questions will be answered. Maybe only a few, or just one or two. Interest should carry over back to the nature center and/or classroom for resource materials. And, on to other similar and often other diverse activities.

As you progress along the dike to station #2, ask questions such as:

a. Look down - what do you see? Foot prints, leaves, tractor tracks, soil, rocks, etc.
b. What do you hear? Birds, trucks, breeze, leaves, dog, etc.
c. Why is there an open area between the trees? How did it get there? How is it different from the timbered areas?

Station #2 - Edge of tree planting, more black willows.
What color is the bark? feel? smell?
Where do the branches start? Shape and feel of the leaves?
The size of the leaves?
What seems to live around the black willow?
What is there around the willow which is not alive?

Station #3 - Look up to the sky. What color(s) is it? Are there clouds? What shapes? Sizes?
What is the weather? Hot, cold; still, breezy; dry, damp, rainy.
What is to the north of the dike? (brush, trees; backyards, houses). What might live in the brush and trees? Can you tell which direction is north? How?

Station #4 - Look way off in the distance. What can you see along the horizon? Clouds, colors, trees, buildings, smoke, etc. What color(s) is the pond? What might live in the pond? Feel the ground by the pond. Is it hard, soft, crumbly, wet, dry, etc.? What does the soil smell like? Is it the same as that on the dike?

Station #5 - Did you see the holes (probably made by a woodpecker) way up high in the top of the black willows in the south east corner? Do you suppose there is anything living there? Do you hear any birds? Where are they? Dead tree, high branches, brush, grass, weeds? Can you find a tree stump? How many rings can you count? Is the tree still living? How can you tell?

The teacher may continue back over the dike or via the loop trail. You may wish to continue similar questions to induce further thinking, delving and exploring. Or, you may wish to just enjoy walking and individually 'observing' your way back through the site.

3. Materials and Definitions

   Teacher, aide(s), students - small groups (6-8) - walking slowly and quietly
   Dress accordingly
   Recorder - pencil, paper, clip board - if desired
   'Collector' - sketch, or note location and description - if desired
   Words used in questions and discussions

4. Time and Place

   Handicapped Children's Nature Study Center - Fairmount School
   Anytime
   Length - about ½ to 1 hour

F. Related Curriculum Activities

1. Recreation - use four senses (see, feel, hear, smell) with friends, family or by self, on way home, on week-ends, in parks, cemeteries, vacant lots, etc.
2. Physical Education - run like rats, float like leaves, act like the weather, etc.
3. Music - listen to bird songs, nature records, sing nature songs, write music to and/or about nature, etc.
4. Art - look at nature pictures of what you saw; sketch, draw, cut, construct a mural, and/or a map of the area, etc.

G. Evaluations

1. Check list of objectives
2. Written teacher comments
3. Verbal student tests
4. Written student tests - objective and/or subjective

See samples in Unit I, "Observing Our Environment Through Our Five Senses - See, Feel, Hear, Smell and Taste".

H. Suggested Further Activities

1. Try the same activities in other outdoor areas.
2. Do the same activities in other seasons in same area.
3. Carry out Unit I, "Observing Our Environment Through Our Five Senses - See, Feel, Hear, Smell and Taste".

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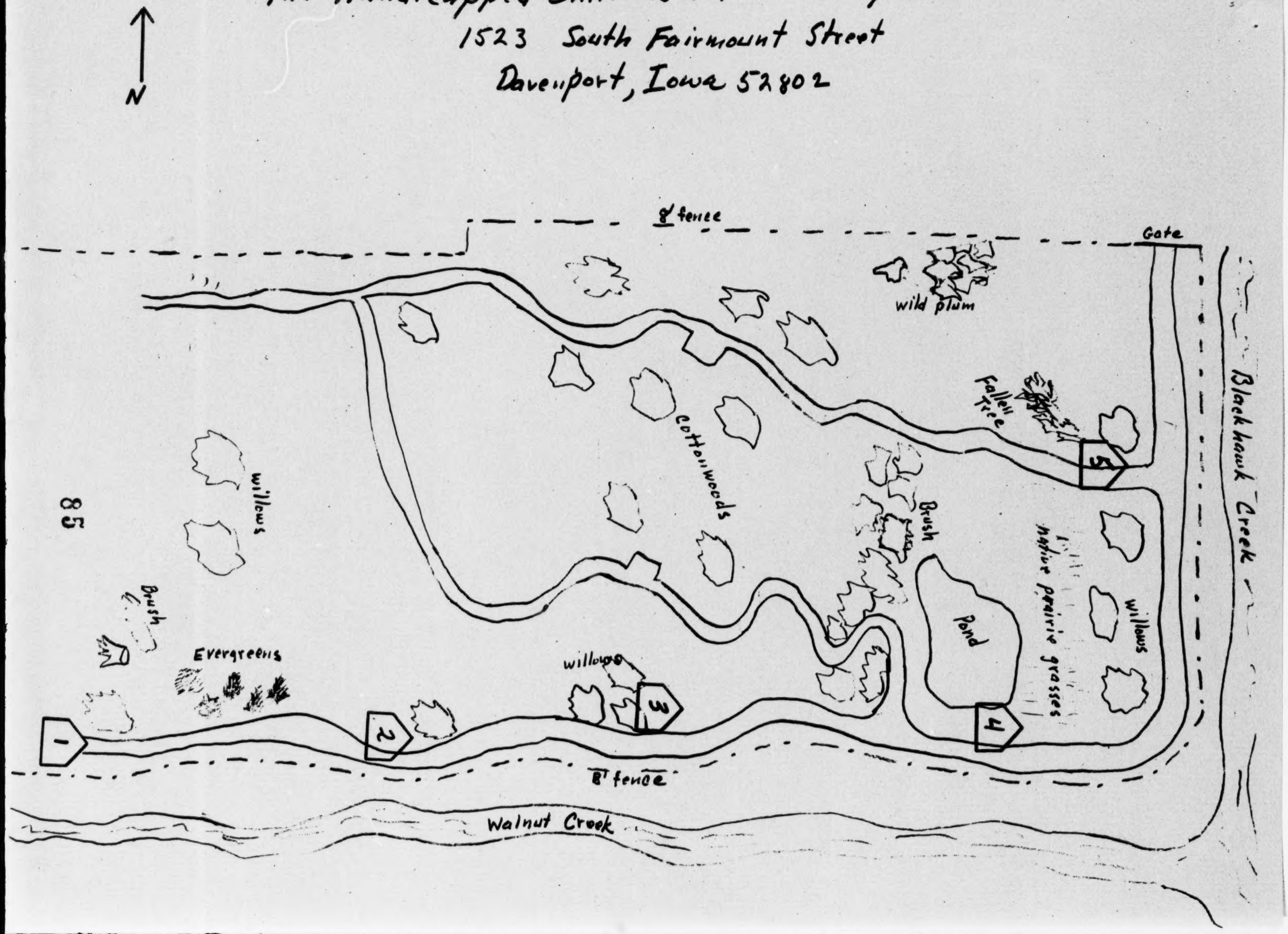

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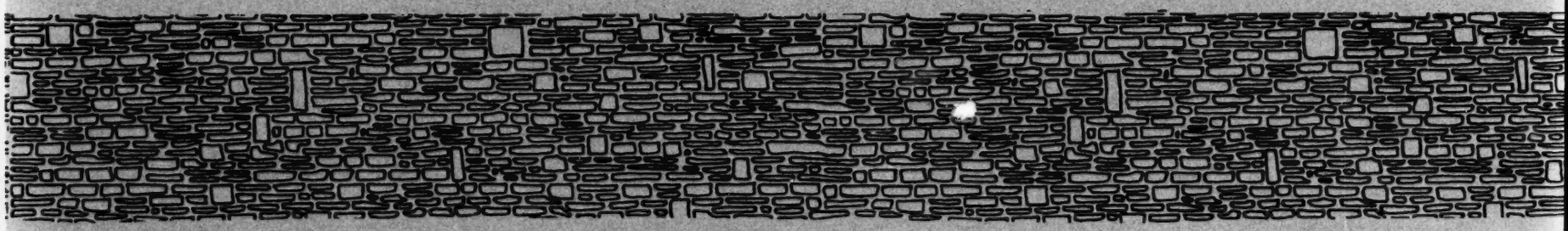

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HANDICAPPED CHILDREN'S

NATURE STUDY CENTER

A TEACHERS GUIDE

87

TREE PLANTING

Activity - Participate in planting a tree

Materials - Trees
Shovels and trowels
Water
Hoses
Watering cans
Aluminum tags
Something hard to write names on aluminum tags
Wire
Camera and film - if you wish

These will all be provided, although we could probably use more if you can bring any. (Please mark)

Primary Objectives -

For all to observe and be a part of the planting.
For those able to assist or by self - dig a hole.
For those able to assist or by self - put in tree.
For those able to assist or by self - tamp the tree.
For those able to assist or by self - water the tree.
For all to observe throughout ensuing weeks.
For those able or to assist - watering trees 2-3 or more times per week.
To learn how to behave in a group in the out-of-doors.

Secondary Objectives -

To be part of tree planting groups.
To be out-of-doors.
To observe, through senses of touch and sight, the differences in the trees.
To observe and learn roots, soil, trunk, branches and leaves,
To observe what lives (or doesn't) around the tree.
To observe differences in color, size, texture and smell or surroundings.

Methods - Meet at your groups assigned time where the sod meets the dike. Dress for weather. Each child (and adult) will be given one tree to plant and a tag with the tree name on it. Put the student's name as well as the name of the tree he will plant on the tag. Your group's area will be shown to

you. We would like your assistance in helping the child dig the hole, planting, tamping and watering. There will be a resource person there to help guide. Feel free to take your own pictures. You are welcome to stay around for other groups and please feel free to "explore" other areas of the 8-acre site.

Suggested Pre-Activities -

Go over what you are going to do.
Discuss what you might see in the area - anyone know any names of plants or animals they might see?
What colors might we see?
Discuss - Why Plant Trees? - looks, soil erosion, animals, and shade.
How long will the tree take to grow to 1 foot? 3 feet? 6 feet?
How old are the trees we will be planting?
Will the trees ever look like other trees in the area?
What if a particular tree doesn't grow?
Use of records in the library - band on trees.
Use of Tree-Wood poster-charts, and other tree materials.
See a film on trees: "A Tree is a Living Thing", IMC #03305 - P
Count the needles in bundles; different from other trees in the 8-acre site?

Suggested Post-Activities -

Discuss trees planted - color, feel, size, how planted, and how will they be taken care of.
Draw and/or color a picture of a tree or a tree area.
Discuss what was actually seen - plants, animals, soil; What colors were they? How did they feel Smell?
What was different in the area? Dead trees, holes in trees, leaves or nothing?
What was the weather like? Clouds, wind, sun, warm, hot, or cool?
Other short trips to the site - maybe while watering and checking your tree - collect seeds, check leaves (maybe collect and press), list trees, note bird nest, holes, check growths, play nature games.
Might stimulate interest to visit related areas - parks, cider mill, sugar maple OR gardening projects, constructing equipment to be used for Outdoor Education - bird houses, bird feeders, ant colony, weather station, etc.
Discuss, study - How do trees grow?

Evaluation -

Behavior in outdoor group
Attitude toward outdoor learning
Participation
Remembering items discussed and participated in

Resources - * May be ordered from or through the Handicapped Children's Nature Study Center.

* Tree and wood posters, charts, leaflets - Forest Service, Conservation Department, American Forest Product
* 'Tree' packet - National Audubon Society - "The Story of Trees for Audubon Juniors", "Guide for Adult Leaders", and "Tree Chart".

Audubon Nature Encyclopedia, Volume II, pp. 2034-2061 - The Curtis Publishing Company, New York, 1965.

FILMS

IMC - "A Tree is a living Thing" - #03305 - P

Film Department, Illinois State Museum
Audio-Visual Department
Spring and Edwards Streets
Springfield, Illinois 62706

"Living Forest" - i-j-h-a - 40 minutes, color
"Miracle of Trees" - j-h-a - 10 minutes, color
Living Forest Series - i-j-h-a- 33 minutes, color
"Forest Conservation"
"Forest Grows"
"Forest Produces"
"Paper and Pulp Making" - 11 minutes - i-j-h-a - color
"Trees Are a Crop" - 20 minutes - j-h-a - color

Director, Audiovisual Center - write for catalog, rental fees and ordering information
Division of Extension and University Services
The University of Iowa
Iowa City, Iowa 52240

"Care and Preservation of Trees", U-3247 J-Ad
"Conserving Our Forest Today", U-5445, I-J
"Forests and Conservation", U-2171, I-J
The Living Forest Series - U-2834, U-2835, U-2836 H-Ad, J-Ad, J-Ad

"How Pine Trees Reproduce" - U-8059, J-C
"How Trees Help Us", U-4550, P-I
"Lumber for Houses", U-3454, J-C
"Paper and Pulp Making", U-4053, I-H
"Seasonal Changes in Trees", U-2880, I-H
"Trees: How We Identify Them", U-4889, I-J
"Use of Forests", U-2714, I-C

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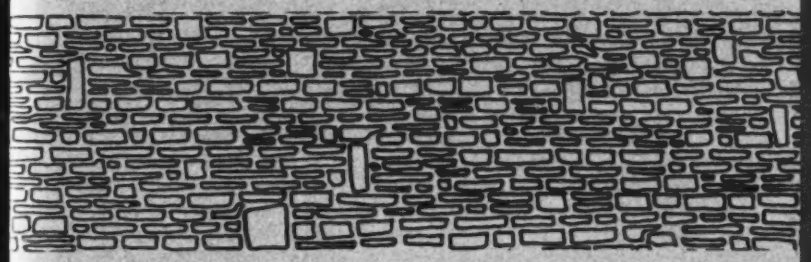
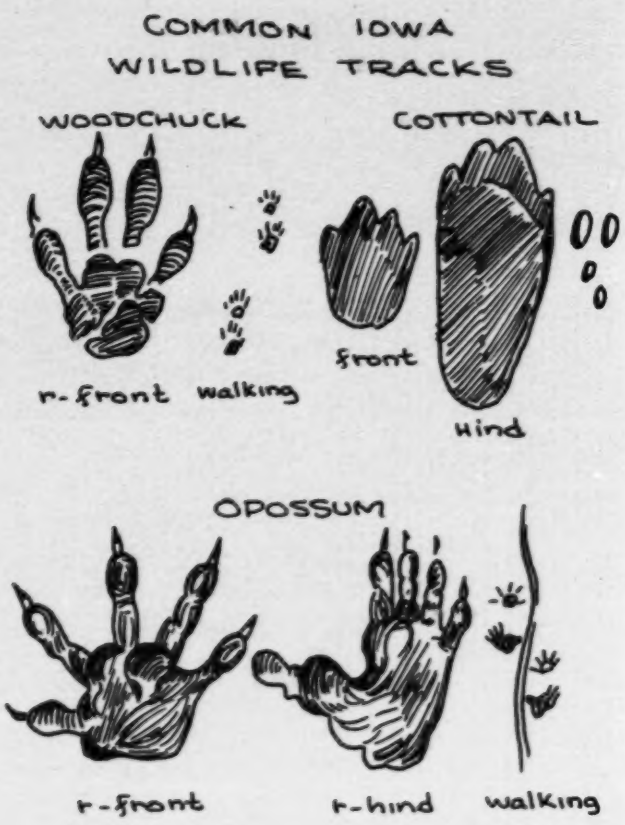


A TEACHERS GUIDE

93



T R A C K I N G

HANDICAPPED CHILDREN'S NATURE
STUDY CENTER, FAIRMOUNT SCHOOL

1523 South Fairmount
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319/326-4969

AIM

To observe (see, feel) and explore wildlife 'tracks' in the snow, sand and/or mud (throughout the Handicapped Children's Nature Study Center) in the out-of-doors.

PURPOSE

To help students to be aware of the existence of many animals in their everyday environments. To help students develop a concept which they can use throughout their lives as they take walks in the woods, meadows or any natural environment.

OBJECTIVES

1. Each student should see several different sized tracks - tiny, small, medium, large, very large; bird, mouse, rat, rabbit, squirrel, cat, dog, raccoon, human, etc.
2. Each student should see different shaped tracks - cat or dog, rabbit, mouse, squirrel, bird, pheasant, crow, human, etc; shoe, foot, hand, "angel", wing, tail, etc.
3. Each student should see several different types of tracks - human shoe, tire, dog, cat, rabbit, rat, mole (or vole or shrew), bird, branch, leaf, etc.
4. Each student should follow a set of tracks. Where does it go? What was it doing? Where did it come from? Where does it live? etc.
5. Each student should know, think, explore, discuss, how the 'thing' made the tracks - type of foot, speed of movement, parts of foot, tail, wings, beak, etc.
6. Each student should compare two-legged tracks with four-legged tracks - bird and/or human with dog, cat, rat, rabbit, etc.
7. Each student should know more than one method of 'tracking' wildlife - scratchings, nests, rubbings, droppings, odors, feet, beak, etc.
8. Each student should learn some ground animals and some tree-climbing animals by their normal tracks.

CONCEPTS

1. There are different sized tracks in the out-of-doors.
2. There are tracks in the out-of-doors made by different types, sizes, and shapes of animals and 'things'.
3. There are different shaped tracks in nature - feet, wings, beak, tail, etc.
4. There are tracks made by different types, sizes, and shapes of wildlife.
5. There are different ways of making tracks - registering, normal movement, fast movement, jerky movement, etc.
6. There are different types of 'tracks' - feet, tails, wings, droppings, scratchings, rubbings, etc.
7. Tree-climbing animals nearly always place the front feet side by side when hopping or jumping - "pairing". Ground living animals seldom show the front feet paired, although the hind feet are generally paired in both animals. Exceptions observed when moving at gaits different from normal.

ACTIVITIES

Lead-Up

1. Look through books, magazines, slides, films, film strips, etc. of winter tracks as well as tracks in mud and sand. Discuss size, shape, speed of travel, purpose of movement, destination, part that made the track, etc.
2. Discuss outdoor behavior - being somewhat quiet, may see some wildlife; and be careful where you step, so as to not to destroy any 'tracks', etc.
3. View film - "Animal Tracks and Sign" - University of Iowa, rental. Check resource listing at the end of this guide.

Activity Procedures

1. Materials, etc.

   a. Student recorder, ruler, clip board, pencil, paper - if desired
   b. Vocabulary - words used in objectives, concepts and activities and questions.
   c. Resources - please refer to the listing at the end of this guide

2. Time and Place

   a. Any time of day
   b. Length - about ½ hour to 45 minutes
   c. Any place in the out-of-doors where there is snow, mud and/or sand, (good idea for the teacher to have checked the area ahead of time) preferably the Handicapped Children's Nature Study Center.

As you walk through the out-of-doors observe (see and feel) different 'tracks' in the snow, mud and/or sand. Ask the students questions about the tracks, such as:

a. What size is the track? Compare with own, others, other tracks, etc.
b. What shape is the track? - location of parts - pads, toes, nails, tail, wings, feathers, tail, beak, etc.
c. What might have made it? animals, human, branch, dropping snow, wind, insects, birds, etc.
d. How did the track get there? from the sky, tree, hole, brush, burrow, etc.
e. How was it moving? flat-footed, tip-toes, stepping in own tracks (registering), etc.
f. How fast was it traveling? hopping, jumping, slow, fast, running; spacing of the tracks, etc.
g. What size, shape, weight is the 'thing'?
h. Where was 'it' going? Which direction? Why?
i. Was something after it? Or, was it after something?
j. Was it carrying or dragging something?
k. Is it alone or are others like it nearby?
l. How old is the track?

Also, question and discuss what is around the area - trees may be leafless, buds showing; bird or squirrel nests; birds singing, flying, pecking; what's the weather?; Will there be different wildlife at another time of the year? When is (different season) it?

What other 'tracks' might be seen? nests, dropping, burrows, rubbings, scratchings, etc.

Compare own track - bare-foot print - with animal tracks - size, shape, impression, location of parts, etc.

Make sketches of several tracks - different sizes, shapes; measure different tracks - compare, display, etc.

Compare two-legged with four-legged tracks.

Look for evidence of eating - leaves nibbled, buds chewed, bark gnawed, etc.

Look for tracks of animals which drag their tail, ie. mice.

Look for signs of birds which use their beaks on trees, ie. woodpeckers, sapsuckers, flickers, etc.

EVALUATIONS

Samples in Unit I - "Observing Our Environment Through Our Five Senses - See, Feel, Hear, Smell and Taste".

1. Check list
2. Teacher comments
3. Pupil written tests - objective and subjective
4. Student verbal tests

SUGGESTED FURTHER ACTIVITIES

Try tracking and locating specific 'things' - mouse, rabbit, cat, etc.

Chart a specific area - size, shape, time; check over a period of time.

Chart other areas - compare - different types - open, grassy , brush, stream, pond, valley, hill, evergreen trees, hardwood trees, etc.

Rabbit tracking rhythmics

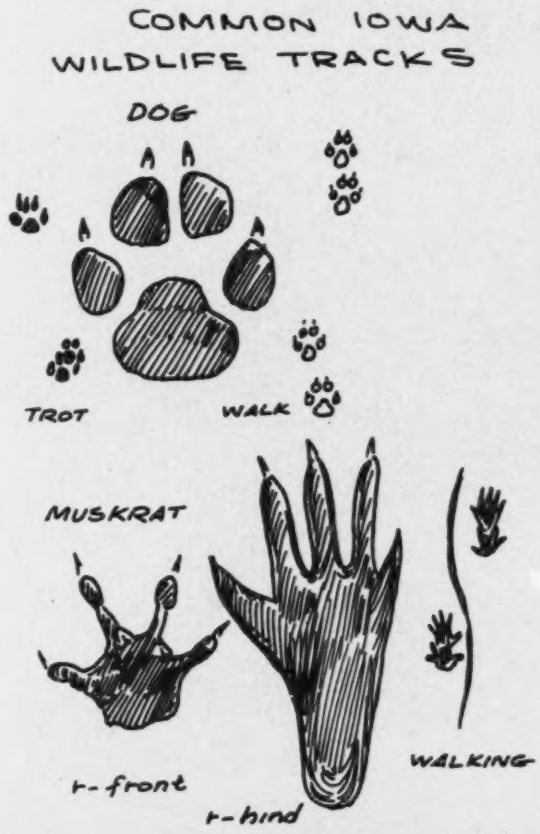
Plaster casting - spring, summer, fall (winter if very cold and experienced)

Flash card 'games' - matching tracks with 'maker', to area, etc.

Make up quizzes, puzzles

Sketch, draw, paint - tracks and/or related natural 'things'

RESOURCES



* May be requested from the Outdoor Education Consultant, Handicapped Children's Nature Study Center.

* Mammals for Audubon Juniors, National Audubon Society

* "Mammals Around Us" - Flash cards, Gull Lake Environmental Education Project, 26 cards.

* Animal Traces, Cornell Science Leaflet, Vol. 59, No. 2, 25¢

* "What Disturbed the Snow?", Park Interpretive Bulletin #5, Lake County Metropolitan Park District, Painesville, Ohio

* "Common Iowa Wildlife Tracks" - single sheet

* Animal Tracks - Audubon Chart

* Rabbit Track Rhythms - single sheet

* Plaster Casting - single sheets

* Slides of tracks in Handicapped Children's Nature Study Center

* Mammals, A Guide to Familiar American Species, A Golden Nature Guide, by H. S. Zim and D. F. Hoffmeister, New York, 1955, $1.00; description of plaster casting - pp. 9-10.

  Animal Tracks, George F. Mason, 591-M, 11465-G-IMC - William Morrow & Company, New York, 1943, 95 pp.

  Tracks and Tailcraft, Ellsworth Jaeger, The Macmillan Company.

* Living Like Indians, Book of American Outdoor and Trail Activities, Allan A. Macfarlan, Association Press, New York, pp. 150-153, (or 3 mimeographed sheets).

A Field Guide to Animal Tracks, Olaus Murie, local libraries

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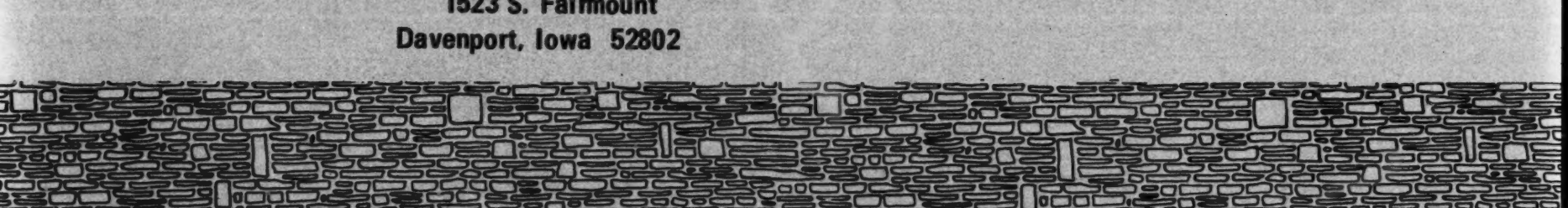

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